

TECHNOLOGY

REVIEW *January* 1953

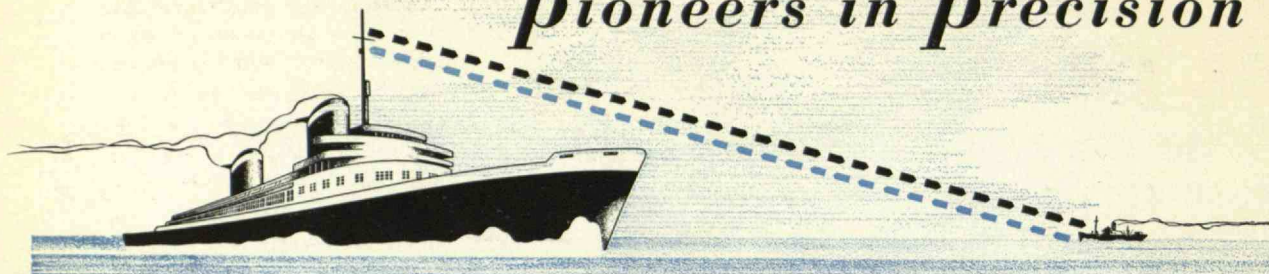


technology review

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pioneers in precision



Actual photo of radar screen picture from ship in San Diego Harbor.



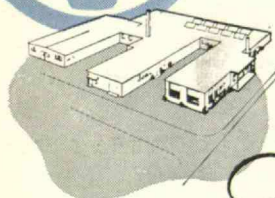
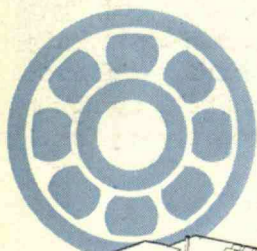
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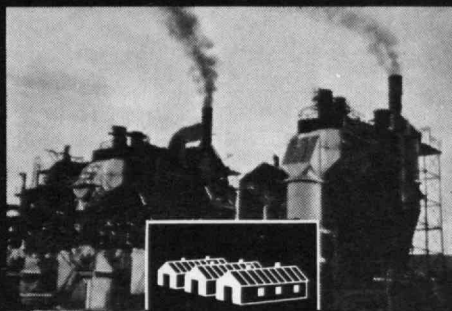


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THE TABULAR VIEW

Philosophy. — In spite of brilliant successes in advancing man's material well-being, science, engineering, and technology are blamed for more than their share of the world's present disorders. If the physical sciences have progressed at jet speed, leaving the humanistic sciences to dawdle along at a snail's pace, have we truly sought, in human relations, that objective truth whose seeking has brought such outstanding success in material gain? May there not be definite advantage in applying to spiritual, ethical, and human problems the same kind of thinking and philosophizing that has revolutionized man's material status? A definitely affirmative stand on this question is expressed in the article (page 147) by F. ALEXANDER MAGOUN, '18, and R. CARTER NYMAN, who see no reason why a sincere search for objective truth should have any more baleful consequences when applied to human relations than to inanimate objects.

A native of Oberlin, Ohio, Mr. Magoun was educated at M.I.T. and Harvard, and is president of Technology's Class of 1918. During World War II, he was consultant to the Department of State. He is an honorary fellow of the American Institute of Management, and a director of the Boston Branch of the Society for the Advancement of Management. Now, as for many years, he is serving industry by applying specialized knowledge in human relations to the needs of those managements which aim to achieve good interpersonal relations in their organizations.

Mr. Nyman was born and educated in Marlboro, Mass. After doing research on industrial relations for the Institute of Human Relations at Yale University, he was the first personnel director of the Southern Division of the Kendall Mills, first personnel director of Yale University, and technical expert, accredited to the 1938 Textile Inquiry Board, International Labor Office, Geneva. Almost the last thing Mr. Nyman did, before his untimely death, was to add his signature to The Review's story.

This article was originally delivered by Mr. Magoun as a joint paper by both authors under the title, "The Engineer and His Philosophy," at the National Spring Meeting of the American Society of Mechanical Engineers, held in New London, Conn., on May 3, 1949.

History. — The Institute's course of instruction in bacteriology comes in for historical review (page 151) by PROFESSOR MURRAY P. HORWOOD, '16, of the Department of Civil and Sanitary Engineering — a member of Technology's staff since Boston Tech moved to its present Cambridge location in 1916. Professor Horwood received the B.S. degree from the College of the City of New York in 1913, and the S.M. and Ph.D. degrees from M.I.T. in 1916 and 1921, respectively. He was an instructor at the Institute from 1916 to 1923; assistant professor, 1923 to 1929; associate professor, 1929 to 1937; and professor from 1937, all in the Department of Biology and Public Health. In 1944 he became professor of sanitary science, and in

(Concluded on page 138)

A black and white illustration showing a hand in the upper left corner pulling back a heavy, draped curtain. Behind the curtain, a sleek, aerodynamic train with a rounded nose and multiple windows is shown in motion, traveling along a track that recedes into the distance. The train has a modern, almost futuristic design with large wheels and a streamlined body.

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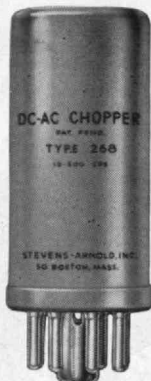
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THE TABULAR VIEW

(Concluded from page 136)

1947 headed the Laboratory of Sanitary Bacteriology and Research in the Department of Civil and Sanitary Engineering, where he has been teaching sanitary bacteriology, principles of sanitary science, environmental sanitation, and public health practices. Dr. Horwood has also had extensive experience in other educational institutions as well. He was an instructor in sanitary and public health bacteriology at Wellesley College, 1917-1918, was in charge of bacteriology and public health at Boston University Medical School from 1919 to 1921, and in charge of public health at Tufts Medical College from 1921 to 1926. He has been director of the Institute's food sanitation service since World War II until last July, when he was granted a leave of absence to go to Burma to assist the faculty of the University of Rangoon to establish improved curriculums, especially in public health.

English. — Higher education in England, as viewed by a recent Technology graduate and Rhodes scholar, is the topic of an article (page 155) by EUGENE B. SKOLNIKOFF, '49. Mr. Skolnikoff was a student in the Co-operative Course in Electrical Engineering and received the S.B. and S.M. degrees from M.I.T. in 1950. He was awarded a Rhodes scholarship and spent the following two years studying Philosophy, Politics, and Economics for a B.A. degree which he received from Oxford University in June, 1952. Mr. Skolnikoff is now industrial liaison officer at M.I.T. in the Institute's program of industry-sponsored research. Mr. Skolnikoff's analysis of higher education in England and in the United States points out the comparative advantages and disadvantages of each. Mr. Skolnikoff concludes that the best all-around education is probably a combination of British and American university training, and, on the basis of first-hand experience, heartily endorses the practice of obtaining a part of one's education in a foreign land.

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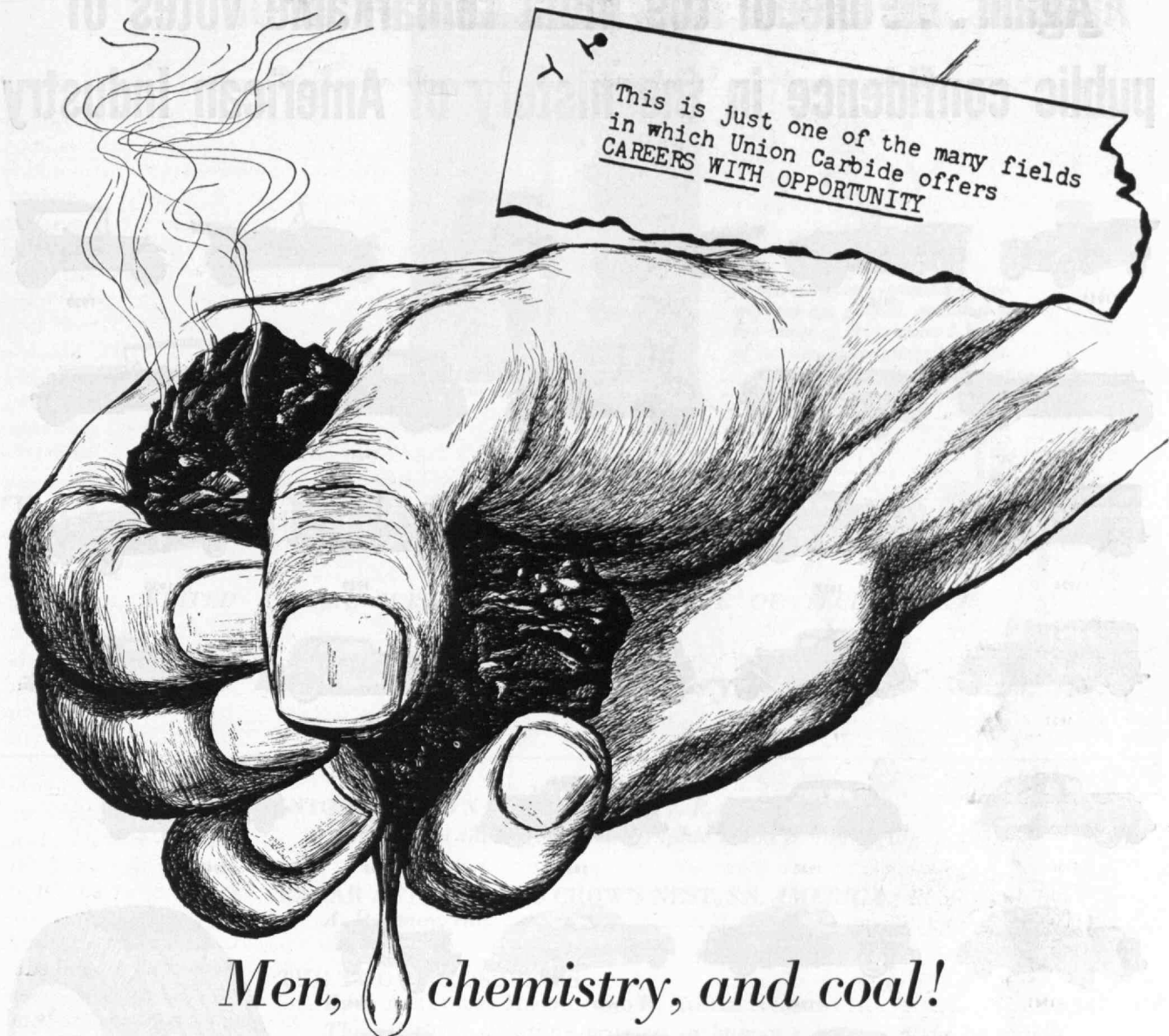
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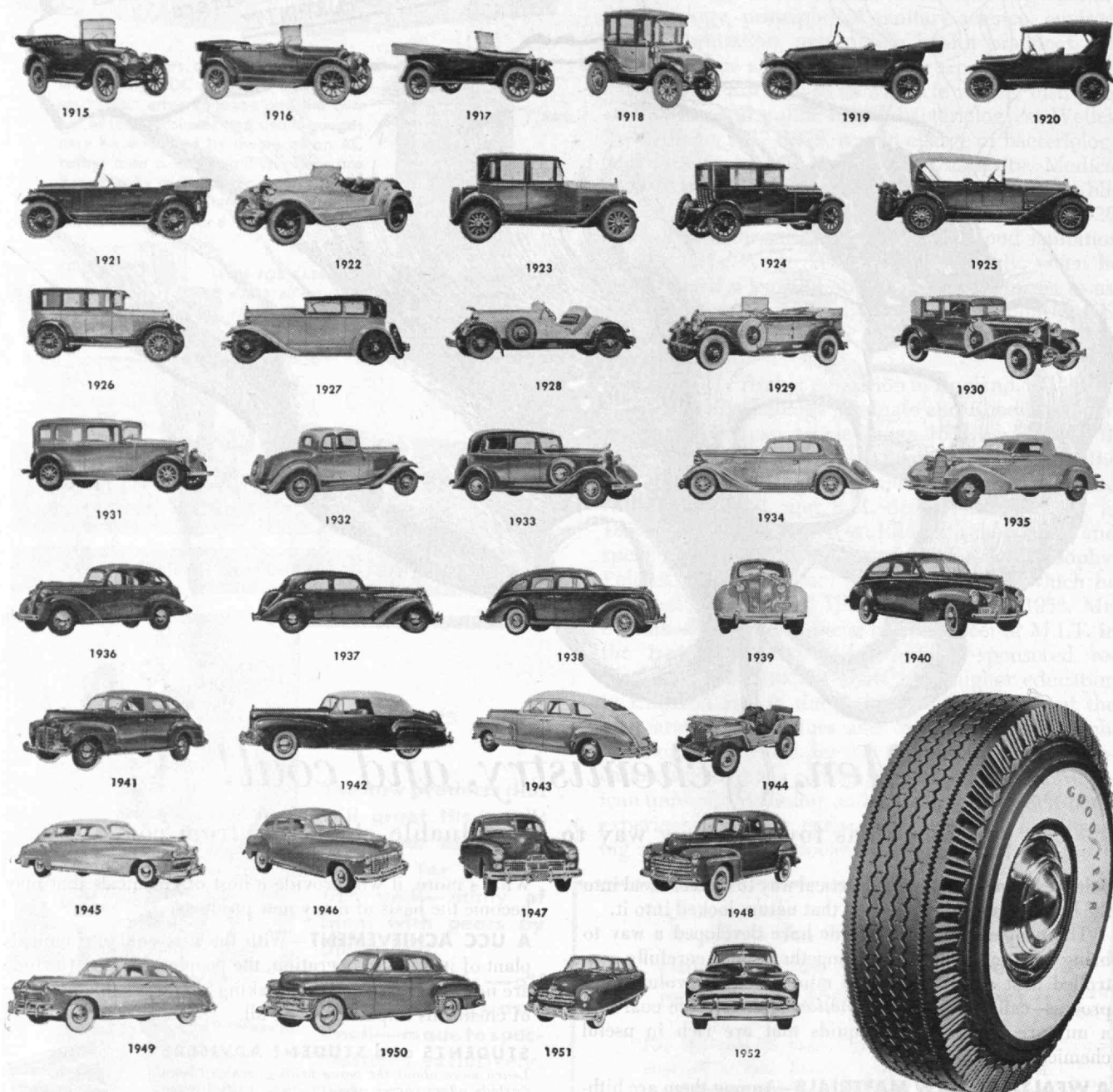
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— Patrick Henry

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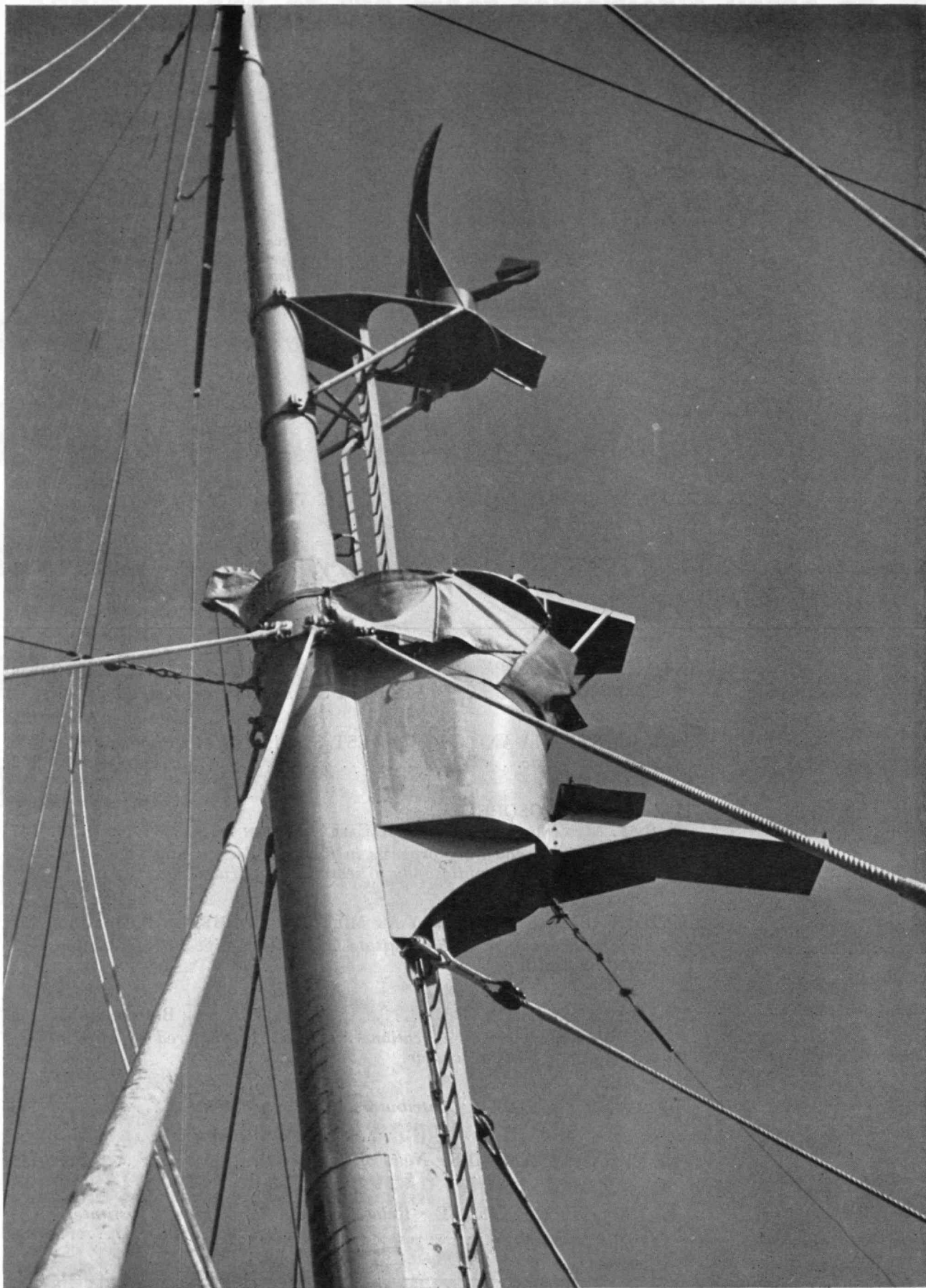
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"That inward eye which is the bliss of solitude."

— William Wordsworth

THE TECHNOLOGY REVIEW

Vol. 55, No. 3

January, 1953



The Trend of Affairs

Impurities Create an Industry

IN most laboratory techniques and manufacturing operations, the attainment of material of high purity is a time-consuming, costly, and difficult objective. It is seldom that one encounters a state of affairs in which the purity of a substance can be too high. Yet, in the field of solid semiconductors, not only is such a situation possible, but intentional contamination of highly purified metals in Group IV of the periodic table promises to have important industrial engineering and economic implications. In the past decade, rapid progress has been made in understanding the behavior of semiconductors, and engineering applications have been quick to hatch out of advanced knowledge of solid state physics.

One of the most significant of these applications is the transistor, representing a class of devices which, for the first time, offers competition to the versatile electron tube, and may even further expand the billion-dollar electronics industry. Since it was announced in 1948 by William Shockley, '36, and his co-workers at the Bell Telephone Laboratories, much progress has been made in transistor developments. Accordingly, a brief survey of the present, and ever-changing, status of these devices may be in order as a preview of some phases of technological progress to look to in the future.

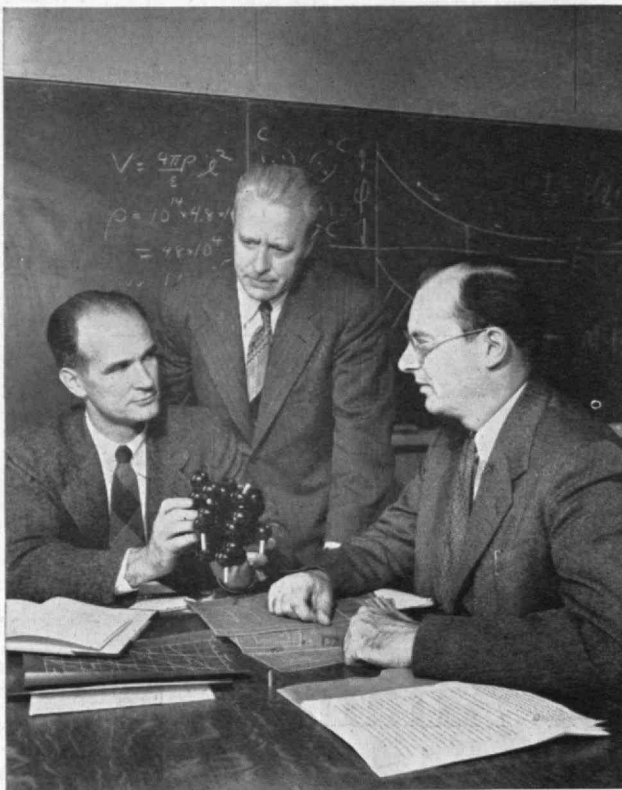
Transistors are capable of rectifying, amplifying, oscillating, and switching operations — all functions which were previously carried out only by electron tubes. Transistors have the distinct advantage over tubes in requiring no power to produce thermionic emission. Since they do not have to attain elevated temperatures to produce controllable currents, transistors can start operating immediately on either continuous or stand-by duty, do not contribute to the generation of useless heat which must subsequently

be dissipated, and are more efficient than electron tubes because of their reduced power consumption. These advantages are of major importance especially where many units are required, as in electronic computing mechanisms, for example. The small size of transistors — roughly about the size of a match head or a small pea, exclusive of containers or sockets that may be desirable — and their rugged construction, with no parts to wear out, are further advantages which transistors offer over tubes. Not enough is yet known about those factors which determine transistor life to make definite statements, but transistors are estimated to have a useful life of more than 70,000 hours. They may even last indefinitely if units are suitably protected against excessive rises of temperature and humidity, and are operated within properly established electrical ratings.

It is not surprising, therefore, that the transistor was destined from the first to have unquestionable impact on electronic design, or that transistors have become a major center of interest for both physicists and engineers. Certainly the development of the transistor may be expected to have important repercussions from two different points of view — engineering and economics.

In physical appearance, the transistor may be described as consisting of a small pellet of semiconducting material, with terminal contacts of proper size and location for feeding electrical energy into, and extracting energy from, the device. In some transistors, the semiconductor (which is usually germanium of exceedingly high purity to which known impurities have been added) consists of a "sandwich" (or other configuration) of different types of germanium instead of a pellet of homogeneous material.

In its mechanism of operation, this disarmingly simple and compact device is sufficiently complicated that no adequate discussion of operation could be at-



Nick Lazarnick

Discussing crystal structure of semiconducting materials at the Bell Telephone Laboratories are (in usual reading order): William Shockley, '36, Walter H. Brattain, and John Bardeen.

tempted except in more space than can be given here. For our purpose it suffices to say that the unusual properties of transistors are dependent upon the addition to highly purified germanium, of slight traces of other elements, especially those in either Group III or Group V of the periodic table.

Although one author indicates that more than 60 experimental types of transistors are known, these can be classed as variations of three general types: the point contact type introduced in 1948; the junction type devised in 1951; and the unipolar type introduced in 1952. Transistors may be made sensitive to radiation in or near the visible spectrum, and the resulting photo-transistors may be expected to compete with ordinary phototubes in engineering applications.

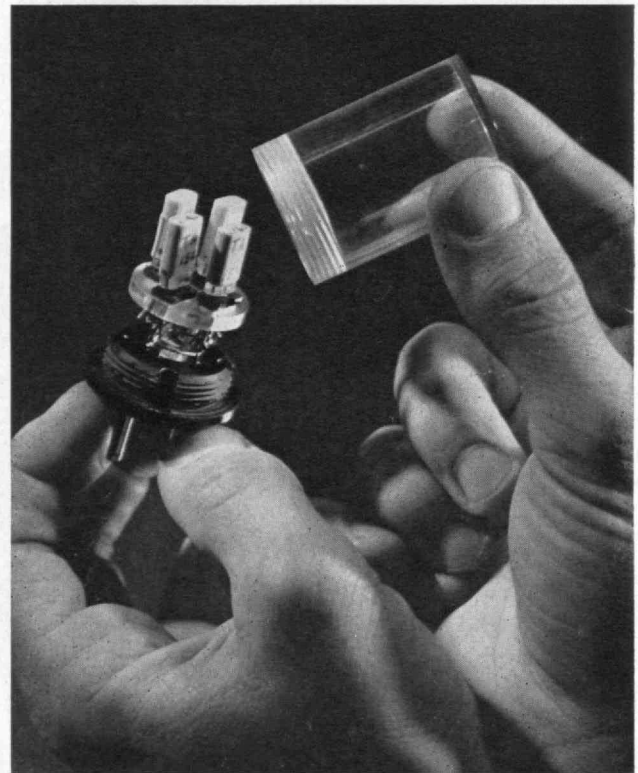
In the early days of transistors, the electronic behavior of semiconductors was not sufficiently well understood to make the manufacture of transistors a matter of science — possibly not even a matter of art, in all cases. The reproducibility of units was poor, reliability was likewise bad, life of manufactured units was uncertain, and transistors were sometimes subject to rapid deterioration at temperatures and humidities that might be easily encountered in commercial and military applications. Furthermore, the characteristics of transistors were not sufficiently stabilized or standardized to facilitate the design of equipment intended for their use.

But even if these difficulties had been overcome immediately, there would still have been the problem of designing suitable circuits to operate with transistors. Although it performs many of the functions of an electron tube, a transistor cannot be plugged into a

circuit as a replacement for an existing tube, and new circuit designs and components must be evolved to take full advantage of the properties of transistors.

Much progress has been made in transistor developments during the last four years, however. There is ample, and growing, evidence that this new group of electronic devices may soon reach the stage of commercial availability; certainly developments in commercial applications will be worth watching in the coming year or two. As an indication of things to come, it is interesting to recall that in November the Radio Corporation of America gave a demonstration to members of the press, at its research laboratories in Princeton, N.J., in which a variety of devices using transistors were put through their paces. While this is, by no means, the first time transistors have been demonstrated before groups in public, it seems quite unlikely that equipment — even experimental models — would be displayed before members of the press if commercial units were not likely to be forthcoming in the reasonably near future. In fact, a few manufacturers have already advertised that transistors may be obtained, on a sample basis, by manufacturers and governmental agencies doing developmental work for national defense projects.

A further indication of the tremendous strides which have already been made, and the possibility of early commercialization of transistors, is reflected by the fact that the November, 1952, issue of the *Proceedings of the Institute of Radio Engineers* is devoted entirely to recent progress in transistors and associated equipment. This issue of 320 editorial pages contains 48



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Complete experimental audio amplifier in which four junction transistors, mounted on a plug-in base, perform the combined functions of two or more electron tubes and an output transformer. Operating from a small, low-voltage battery, this amplifier can provide sufficient power to operate a loud-speaker.

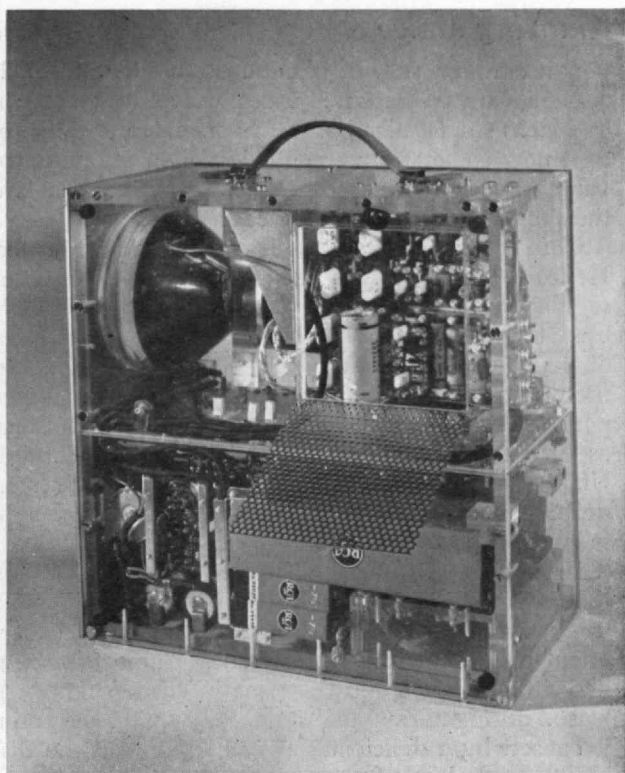
articles dealing with the technical and engineering phases of transistor developments, from the physics of semiconduction to a discussion of circuit design and applications in instrumentation. Readers of The Review may be interested to know that contributions to the November issue of the *Proceedings of the I.R.E.* have been made by the following Technology Alumni — all of whom have written technical articles for this special issue: Richard F. Shea, '24, Hsu-Yun Fan, '34, Charles W. Mueller, '36, William Shockley, '36 Lloyd P. Hunter, '39, Belmont G. Farley, '42, and Robert L. Pritchard, 6-46.

Well over a year ago it was possible to demonstrate the amplifying and oscillating properties of transistors in a highly dramatic manner by means of a circuit energized by a "wet battery" composed of two coins of different metals held between blotting paper which had been moistened with saliva. In its press demonstration of mid-November, the R.C.A. demonstrated such units as: portable public-address system, personal radio receiver, portable FM radio set, automobile radio set, portable phonograph, low-power oscillator or radio transmitter, electronic musical instruments, transformerless power amplifier, elements for electronic computing machines, and industrial and broadcast television systems, in which transistors were essential components.

At the Research Laboratory for Electronics at M.I.T., work has been in progress for several months on the use of transistors as multiplying components in the design of new electronic computing mechanisms. The Bell System has devised a variety of packaged elements containing transistors to perform the functions of encoding, translating, counting, registering, and serial addition in computer work, and packaged audio oscillator and amplifier units, sealed in plastic, have been built. Not all of these applications are basically different, and undoubtedly many other applications have also been made. But the list does indicate some of the things that have already been accomplished in utilizing transistors.

The transistor is not expected to supplant the electron tube any more than radio replaced the phonograph. In fact, because the transistor will allow the development of electronic devices not now possible, the market for electron tubes may even increase under the full impact of commercial transistors. As new types of transistors come from the research laboratory to provide greater power, to operate at higher frequencies, or to function with greater reliability, the field of potential applications will enlarge still further.

At the present time it is difficult to come to any definite conclusions regarding the characteristics and ratings of transistors for engineering applications because development has been so rapid that commercial ratings and tolerances have not yet been fixed. Undoubtedly progress in this direction will be rapid in the coming year, and already much has been done to improve the stability, reliability, and economical yield of developmental units. Temperature limitations have not yet been overcome, although substantial improvements have been made. The behavior of transistors is also reported to be markedly influenced by humidity, and again it has not yet been possible to attain that degree of independence of humidity that



Radio Corporation of America

A portable, battery-operated television receiver which uses experimental transistors. This single channel set, housed in a plastic case 12 by 13 by 7 inches in size, produced satisfactory pictures from the transmitter atop the Empire State Building at distances of five miles using a self-contained loop, or at 15 miles when using a "rabbit ear" antenna. The only tube used is the five-inch Kinescope picture tube shown at the upper left.

is desirable. Possibly suitable techniques of sealing transistors in plastic, or other hermetic enclosures, may provide a solution to this problem. In certain applications transistors may be more noisy than is desirable, and at present the maximum output of these devices appears to be in the neighborhood of one or two watts; many transistors will be operated at much lower power outputs, but higher ratings are certainly desirable. The upper frequency at which transistors may be operated depends upon the type of transistor and also its operating conditions, but units have been operated at frequencies as high as 130,000,000 cycles per second.

There is still much work to be done before transistors become as universal and readily obtainable as radio tubes, but the outlook for the future is bright. Present understanding of semiconducting devices is mature; much better than was our understanding of vacuum-tube behavior in 1915, when a vacuum-tube transmitter at Arlington, Va., sent out radiophone signals which were picked up simultaneously in Hawaii and Paris. A whole new field of circuit engineering is yet to be developed, but the required techniques of network analysis are well known. Tube manufacturers are feverishly engaged in perfecting transistors, and when these become available for commercial use, a much larger group will tackle problems of circuits and applications. All in all there is good basis for confidence in future progress in a field in which impurities will undoubtedly pay high dividends.

Amazing Maize

ONE cardinal rule of scientific thought is to challenge any concept that is of purely rational origin, and lacks empirical support. Endorsement of this precept now comes from recent reports on the nutritive value of *tortillas*, those corn (maize) cakes that are the staple food of many Mexicans.

Corn for making *tortillas* is cooked in lime water. Hence it has sometimes been held that the resultant regular ingestion of alkali must have baleful effects upon the Mexicans. No such injury, however, has been objectively reported. To the contrary, the Mexicans on the whole are known to enjoy better health than other peoples whose major food is maize. Such populations, as in parts of Africa and formerly in the southern United States, are notoriously subject to a nutritional deficiency disease called pellagra. Mexican people in contrast, have been quite free from this affliction.

Recently published studies attribute this paradox to a gain in vitamin value by corn as a result of lime treatment in the making of *tortillas*. Laboratory experiments have shown such treatment to "unlock" niacin, a B vitamin apparently present in corn but not released during normal digestion. Pellagra, in the main, is caused by a deficiency of niacin. Indeed the disability and death from pellagra, once rampant in southern areas of the United States, have largely been ended by the addition of niacin (along with other nutrients) to all corn products consumed there. The public health significance of such enrichment of maize products is evidenced by its having been made a legal requirement in a number of southern states.

Apparently the release, by lime treatment in the making of *tortillas*, of the niacin inherent in maize has kept pellagra from being a scourge in Mexico. Reports of these findings also indicate a secondary benefit of the lime treatment; namely, an increase in calcium level of the Mexican dietary. Calcium is a salubrious nutrient that may be insufficient in diets unless they include liberal amounts of dairy products, green vegetables, and other relatively expensive foods. Hence it is particularly fortunate that the *tortilla* eaters of Mexico, of whom many have low incomes, can derive desirable calcium from their favorite food.

Thus it has become clear that the preparation of *tortillas* with lime, once vigorously decried, is in truth doubly beneficial from the dietary standpoint.

Magnetic Clutch Studies

FOR the past three years, members of the Servomechanisms Laboratory at M.I.T.* under the direction of George C. Newton, Jr., '41, Associate Professor of Electrical Engineering, and with the sponsorship of the United States Air Force, have carried on a research program to determine the characteristics and potentialities of magnetic-particle clutches. The program was initiated shortly after the announce-

ment by Jacob Rabinow of the National Bureau of Standards that the "viscosity" of a mixture of iron powder and oil could be controlled through variation of magnetic field strength. Mr. Rabinow suggested the application of this phenomenon to a clutch which he called the magnetic-fluid clutch.

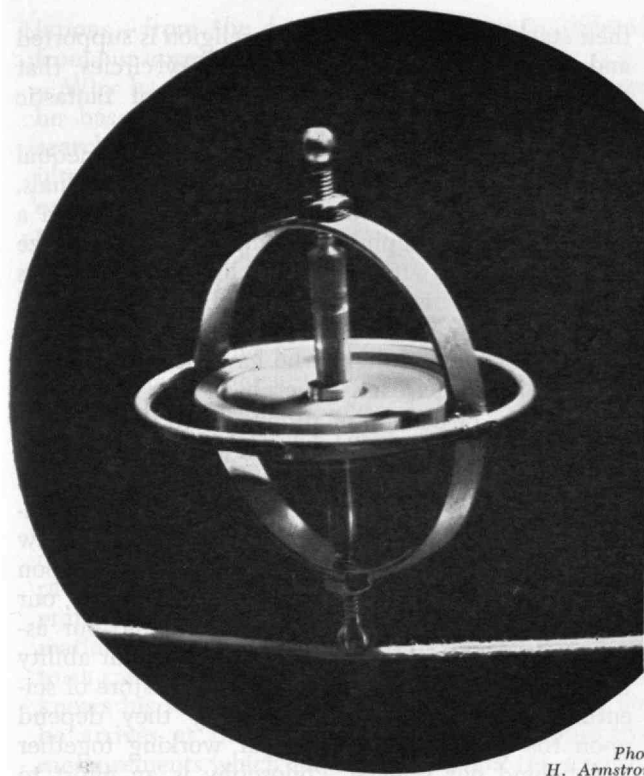
The magnetic-fluid or magnetic-particle clutch effects transmission of torque from one member (such as a disc or cylinder of magnetic material) to another by means of the cohesive and adhesive strength of the magnetic medium contained in a small space between the members. The medium is a mixture of iron powder and a suitable lubricant. The cohesive and adhesive strength of the medium, and thus the torque capacity of the clutch, can be varied by changing the strength of the magnetic field which pervades the medium.

At the start of the program, the fundamental properties of magnetic-particle clutches and magnetic mixtures were essentially unknown. Consequently, the first phase of the program was to determine these properties. Experimental clutches were built with special features to permit making the necessary measurements. Static and dynamic properties of iron-particle mixtures, such as the relationship of shear stress to flux density, slip speed, gap length, temperature, lubricant, particle size, and other variables were investigated. The results indicated advantages for solid lubricants, such as graphite and molybdenum disulphide, over oil which was most commonly used by early investigators. Oil, as a lubricant in the iron-particle mixture, possesses undesirable characteristics for many clutch applications. It is difficult to seal and becomes unstable at relatively small temperature elevations. The dry lubricants are less difficult to seal and can withstand higher temperatures than oils. Using a mixture of eight micron iron powder particles containing 1.7 per cent molybdenum disulphide for lubrication, shear stresses of the order of 20 pounds per square inch have been obtained at flux densities of 1.0 weber per square meter; furthermore, for a given clutch configuration, comparable torque characteristics were obtained with dry lubricants and oils. Some other facts of interest are: (1) the torque is essentially independent of slip speed, (2) shear stress is only mildly influenced by gap variation for invariant field strength, and (3) the most suitable particle size seems to be in the 6 to 10 micron range.

The thermal conductivity of all particle mixtures was found to be so poor as to constitute a serious obstacle to dissipation of heat generated within the clutch. Consequently, an alternate to the phenomenon of intrapowder shearing for producing forces was sought. Experiments then showed that with a non-magnetic clutch facing, shearing tends to be localized at the boundary between the face and the powder mixture. This surface shearing permits more favorable heat transfer by generating heat close to easily cooled surfaces rather than within the insulating mixture.

At present, studies are being made to determine the applicability of magnetic-particle clutches to lightweight, high-speed servomechanisms in sizes up to 10 horsepower. Chief among the problems encountered in this application is that of cooling.

* The following men have contributed to the clutch program at the M.I.T. Servomechanisms Laboratory: Charles A. Cibelius, Jr., '49, Elliott Cutting, '51, Joseph P. Ivaska, '32, James Jursik, G., Robert Kramer, '49, Alfred J. Parziale, 2-47, P. D. Tilton, and Norman J. Zabusky, G.



Photos
H. Armstrong Roberts

The Two Philosophies

*So Long as We Attack Our Material and Spiritual Problems
by Virtually Opposite Methods, Is It Surprising That
Success Is Achieved in One Case and Not the Other?*

By F. ALEXANDER MAGOUN AND R. CARTER NYMAN

MAN is an astounding creature; positively dazzling in his sudden achievements in some areas, and equally unexpected in his persistent failure in other areas. Consider the field of aeronautics alone. The first successful heavier-than-air, man-carrying flight took place less than half a century ago. It lasted 12 seconds and leaped the breath-taking distance of 120 feet. This is less than the wingspread of a modern transport airplane. Eight years later the first transcontinental flight took 59 days. In 1949 a jet bomber flew across the continent in three hours and 45 minutes. We have now flown faster than the cannon balls of the Civil War, circled the globe nonstop, and remained in the air for more than 1,000 hours. All this was accomplished in a mere half century!

On the other hand, World War I, undertaken by us on the ground that it was a war to end wars and to make the world safe for democracy, did not lead to the sweet, clear sunshine of everlasting peace for which so many millions hoped. It led to the destructive climax and the awesome tragedy of a second and

far worse world war, exactly as 2,500 years ago one war led to another until, in an immense spiritual emptiness, the glory that was Greece went down to destruction.

Why this amazing progress in the area of science and engineering, but almost none in the area of interpersonal relations? The difference can be neither accidental nor incidental.

There are those who will blame the scientists. Are they not the men who developed the theories which destroyed our old absolutes, who undermined our religious beliefs, who left us without a faith to live by? It was they who convinced us that the earth is not solid, and the stars are not fixed, as we thought. Did they not invent the artillery, the submarine, the poison gas, the tank, the bombs, the proximity fuse, the self-propelled weapons, and the as yet untried biological warfare?

But why blame the scientists? Surely no man can foresee to what good or evil purposes his research may be put. Certainly Einstein was not thinking of the



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Here, then, are the two basic philosophies . . . that of finding the true nature of things

atomic bomb when he worked out his equation for the transformation of energy. But when he told Franklin D. Roosevelt, 35 years later, that the equation demonstrated the possibility of atomic fission, he was definitely involved in the development of the bomb, as were the scientists who carried out the actual design and construction. However, to blame the American scientists for beating the others to the draw is not only muddy minded and uncritical; it is dishonest. Are the rest of us piously to wipe our mouths saying, "Lord, we did not eat"?

There are those who will blame the politicians. Did they not dupe us with secret treaties; endeavor to steal kingdoms where poor men steal bread; connive with businessmen to preserve privilege, pelf, and personal power through cartels, through taxing away the savings of the thrifty to use in the enticement of the more numerous incompetent? In some countries they gained power through the knout, the lash, and the more obvious confiscation of property. On the other hand, if the people wanted better leaders, does not history shout that they could start a political avalanche that would take out the dead trees and send the obstructive rocks leaping?

A few may even blame the clergy. Have they not held resolutely to discarded beliefs; denied our inborn goodness; made religion a mystery rather than a search for truth; promoted group hatred by insisting that only the particular sect to which they happened to belong possessed a direct, authentic pipeline to the throne of God? Yet one hears that the clergy are losing

their status as moral guides; that religion is supported and maintained only by the reactionary circles; that the Bible is considered "a collection of fantastic legends without any scientific support."

Many will claim our trouble arises from the unequal distribution of wealth among nations and individuals. If this is a sound premise then we are indeed in a sorry plight, for it is physically impossible to equalize natural resources and favorable climates in all parts of the world. It is equally impossible to endow all men with identical abilities. There will always be those who have and those who have not.

Fortunately there has never been any correlation between the possession of property and the capacity for peacefulness. Furthermore, the wealth of America, for example, does not lie in such things as the forests of Oregon, the iron ore of Michigan, the coal of Pennsylvania, and the oil of Texas. China, too, has raw materials. Our bountiful economy is dependent upon our railroads, our power plants, our textile mills, our farm machinery, our chemical industry, and our assembly lines. These, in turn, depend upon our ability to work together, and upon the country's store of scientific knowledge. Most particularly they depend upon the philosophy behind our working together and behind our science. Philosophy is an effort to achieve a theory about wisdom. Knowledge without philosophy is only undigested information.

But why this terrifying lag between science and morality? What keeps involving us in such destruc-

tive upheavals? When the apple cart has been upset, discovering the cause of the catastrophe may have greater significance for the future than what the cart contained when it was overturned, or, for that matter, how to salvage what remains of the spilled contents.

What gets us into all this trouble? Clearly not our inescapable dependency on nature, for science and engineering have made this dependency increasingly secure and productive. Science and engineering have given us, in the short space of 300 years, undreamed of progress in the fields of transportation, communication, agriculture, medicine, clothing, housing, and manufacturing. No longer need we fear starvation or death from exposure. It is not our inescapable dependency on nature which bedevils us; it is our inescapable dependency on each other. This is still both frightening and insecure.

Here is an area in which the scientist, the politician, and the clergyman have so far contributed little of effective, practical value. Destructive conflicts between men are world-wide. Most of the people of the earth want peace, but do not know how to live and work together. Consequently, they are confronted by the threat of a destructive exploitation of science which may destroy civilization, and perhaps even humanity itself.

A consideration of the unquestioned success which science has achieved in solving the problems of our dependency on nature suggests two questions: why has the scientist been so successful in his professional field; and how has our approach to interpersonal re-

lations — from the family to the nations — differed from our approach to nature?

Why has the scientist been so successful? Because he has a self-correcting philosophy of continually searching for more truth, through reason, and with integrity. He has devised the most amazing procedure ever followed for increasing knowledge. His method is to begin with the systematic investigation of a small area. This is done by carefully planned, honest experiments and the honest analysis of their results. These gradually widen in scope as his knowledge increases. He recognizes and carefully labels all assumptions. He accepts as true only those results which are exact, objectively measurable, and reliably repeatable.

All this is not merely a consequence of his method; it is essentially a consequence of the philosophy which brought that method about. This is a philosophy which insists that all conclusions are tentative, not ultimate. The scientist knows his postulates are only probabilities. He recognizes that the best any generation can do is to add a little to the series of approximations by which knowledge comes closer and closer to the whole truth as more and more is learned. He knows his formulas are only statistical averages, but he arrives at them by the most careful, objective measurements which can be made. Thus, the scientist has a constructive, self-correcting method because he has a self-correcting philosophy, comparatively free from the repetitive mistakes of dogmatic authority or of tradition. He is not endeavoring to conceal or to

additional law not yet understood, exactly as the missionary can remove and replace his false teeth in accordance with procedures the cannibal does not yet comprehend.

It is not merely well-tested and well-supported evidence which gives to the scientist his authority in a world of uncertainty; it is his own never-ending search for more completeness and more truth in his conclusions. In short, it is his self-correcting philosophy which has made the scientist's approach to our dependency on nature so successful. This, in turn, has given us confidence in his opinions. At the lowest level, science consists of the routine application of formulas. At the highest level, it consists of the discovery of the laws of the government of nature, arrived at by exact observation, creative reflection, and objective verification for truth.

By this means, in the Twentieth Century, scientists have built higher, spanned farther, drilled deeper, and seen infinitely more in the heavens than man has ever done before. They have constructed single engines of more power than existed in the whole mechanical world in 1800. Even today, every community still has citizens who can remember when Louis Pasteur discovered the existence of germs; when the farthest distance the human voice could be heard was limited by what "a good pair of lungs could do in a favoring wind"; when most houses were lighted by kerosene lamps; and when there was no such thing as an automobile, or for that matter, a trolley car.

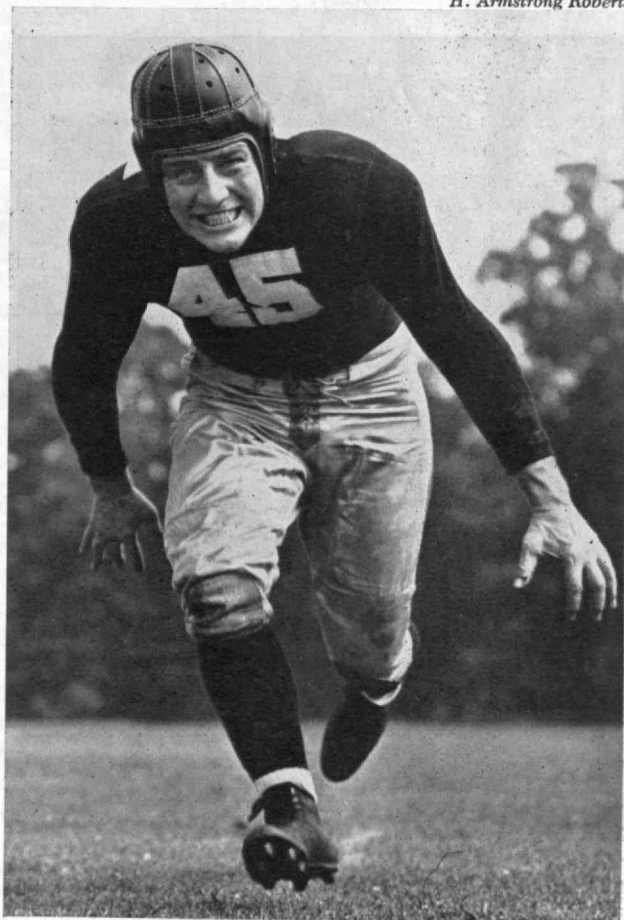
... on the other hand, the philosophy of domination — by enticement or even coercion.

suppress ideas contrary to his own; he is seeking truth no matter what old concepts must be abandoned. Of all the professions, science is almost alone in this capacity continually to reform itself from within.

As a result, when a scientist says something he is believed in a way no lawyer, no executive, no politician, and no clergyman is ever believed, for he is believed *around the world!* He is not repeating the preachments of 1,000 years ago. He is not relying on some legal precedent. He is not trying to prove himself right. Indeed, he is the very first to try to prove himself wrong. He is trying to find truth, based on objective facts which any competent person can check.

The most rational faith in the world is his faith that the laws of the government of nature can be utterly relied on. In everyday life "no parking" signs do not always mean that there shall be no parking. Neither does the commandment, "Thou shalt not kill," guarantee that life may not be destroyed. But the philosophy of the scientist is firmly rooted in the belief that it is impossible to break the laws of nature because the laws of nature always operate, and operate consistently. It is foolish to talk about some action being against God's law, for the laws of the government of nature cannot be broken. Force is always equal to the time rate of change of momentum. Poison will always poison. Stealing will always be followed by a loss of self-respect, whether anyone else finds out or not. Any seeming exception to the laws of God is due either to an incomplete understanding of the law, or due to changed circumstances and the operation of some

H. Armstrong Roberts



The second question suggested by the success of science is: How has our approach to the problems of human relations differed from our approach to the problems of nature? Despite ages of experience our dependence on each other has remained insecure and terrifying. Results in the social sciences have been vastly different than those in the physical sciences. Is it unreasonable to suppose that the method has been equally different? Perhaps here lies a clue.

Surely the true foundations of constructive politics and righteous religion are as unfailingly dependable as those of physics or chemistry. Instead of recognizing our assumptions in these areas, examining honestly and critically what our experience shows, we have stopped with prejudice and dogma. Here, we do not yet have a self-correcting philosophy of experiment, examination, and critical revision in the light of truth, approached through reason, and with integrity. As a result we still destroy each other as blindly as the Greeks destroyed their civilization when Pericles shouted, "The honor of the state is at stake!" What price false honor! Why should it be more difficult to live co-operatively than to die under duress in conflict?

It has already been suggested that it is unrealistic to blame the political leaders while absolving the population from responsibility. If the diplomats of the United Nations should honestly try to find the best impartial solutions to our international differences, their constituents would rise against them with the cry, "You sold us down river." This is no self-correcting procedure. Nevertheless, the happiness as well as the wealth of the world lies in the application of a self-correcting philosophy.



Raymond E. Hanson

There is no other road by which to achieve freedom to work together co-operatively.

In human relations most of us have been consistent in our efforts to dominate: by coercion when we felt strong, by enticement when we felt weak. We are political, not scientific, in our interpersonal philosophy. The technique of the politician (not to be confused with the statesman) — be he in the home, the school, the factory, the sanctuary, or in the government — employs both enticement and coercion. It is a simple technique which has been amazingly successful for thousands of years. Essentially the steps in the dictator's philosophy are:

1. You have been cheated by other leaders and only I can save you. Follow me.
2. Now that you have chosen to follow me you can depend on me.
3. You are dependent on me.
4. Because you are dependent on me you must do as I say.

Thus do those who want someone to take care of them find a shepherd. But when the fences are tight and the wool is long, they will surely be shorn.

"Scare 'em," said Huey P. Long, lifting the dark veil that usually covers the hypocrisies of his kind, "Scare 'em enough, then sell 'em the idea you know the way out, and they'll follow you through Hell or come Monday." Distort the facts. Chill men's brains with fear. Then you can lead people anywhere. Sooner or later, and usually once more muddying the argument with emotional nonessentials, someone else arises to begin all over, "You have been cheated and only I can save you."

Johann Wolfgang von Goethe translated this into a penetrating story when he wrote *Faust*. The old doctor was a scientist who understood the methods of science but not its philosophy. Had he understood its philosophy he would have looked into his own behavior for the causes of his unhappiness instead of allowing himself to be enticed into trying to buy supernatural solutions. What fathomless contempt Satan must have had for Faust, whose discouragement and sense of futility made him wretched enough to be willing to sell his soul.

Mephisto: Very good. I am able to satisfy your desires.

Faust: And what must I give you in return?

Mephisto: Almost nothing. Here, I am at your service, but below you are at mine.

Faust: Below?

Mephisto: Below. Come, sign. What! Your hand trembles? What does it take for you to decide? Feminine youth appeals to you; look!

(Scene opens disclosing Marguerite spinning)

The moral poison here is obvious. It would, of course, be unthinkable to compare the procedure with exhortations which say in effect, "How are you to be rewarded? Here you are to be at my service, but above I will be at yours." The point is that instead of recognizing assumptions and unceasingly endeavoring to get at the truth in human relations, as the scientist has learned to do with his materials, we have endeavored to dominate and to exploit each other. There is no area of interpersonal contacts in which we have not been guilty to some degree.

(Continued on page 162)

Bacteriology at M.I.T.

*A Pioneering Course at the Institute
Has Made Significant Contributions to Public Health*

By MURRAY P. HORWOOD

THE Massachusetts Institute of Technology received its charter from the State legislature on April 10, 1861. The intervention of the Civil War, however, made it impossible for M.I.T. to open its doors as an educational institution until 1865. Karl T. Compton, former President of M.I.T. and now chairman of the M.I.T. Corporation, has reviewed this early period in the history of M.I.T. in the following words:

"With a lively and prophetic vision of the part that science was capable of playing in advancing human welfare, William Barton Rogers (1804-1882), geologist and natural philosopher of the University of Virginia, planned and worked for nearly a decade prior to the Civil War for the establishment of a great institute of technology. He selected Boston as the most advantageous location because, as he said, 'Ever since I have known something of the knowledge-seeking spirit and the intellectual capabilities of the community in and around Boston, I have felt that it was the one most certain to derive the highest benefits from a polytechnic institution. The occupations and interests of the great mass of the people are immediately connected with the applications of physical science, and their quick intelligence has already impressed them with just ideas of the value of scientific teaching in their daily pursuits.'"

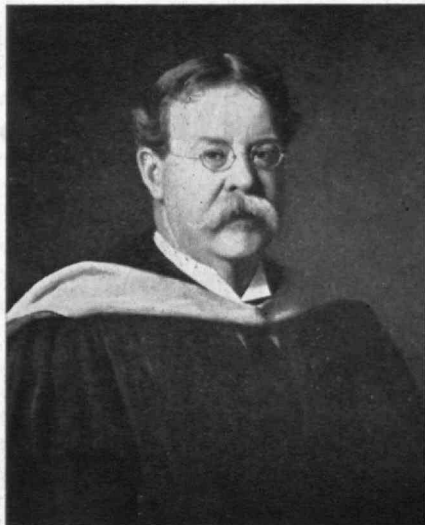
M.I.T. pioneered in extending the laboratory method of instruction as an indispensable technique. Starting in rented rooms with a total of 15 students, the Institute has grown, until in 1951, the student body numbered approximately 5,000 including 470 students from 59 foreign countries. A total of 252 American colleges and universities and 121 foreign institutions were represented. The graduate student enrollment alone numbered 1,675. The teaching staff in 1950-1951 was made up of 1,376 members of whom 436 were of faculty rank.

It will be recalled that the early years in the history of M.I.T. coincided with the epoch-making discoveries of Pasteur and Koch in microbiology. Pasteur established the germ theory of fermentation in 1860 and Koch, the germ theory of animal disease, in 1876. In 1871, the famous Course VII at M.I.T. was organized as the Department of Natural History. This name was changed to the Department of Biology in 1883, and to the Department of Biology and Public Health in 1911. At first, particular emphasis was placed on the study of botany as affording the proper and natural introduction to the study

of biology, zoology, and paleontology. The facilities of the Boston Society of Natural History were made available to students from M.I.T. for instruction in these subjects as well as in other branches of natural science. Botany was emphasized at M.I.T. at this time as being the science best calculated to train the mind for close observation, accurate description, and systematic classification.

After being graduated from the Sheffield Scientific School at Yale, Professor William T. Sedgwick, the founder of the Department of Biology and Public Health at M.I.T. and the first President of the Society of American Bacteriologists, came to M.I.T. from the Johns Hopkins University in 1883 as assistant professor of biology. This Department, destined to remain relatively small in a school that was to become one of the leading educational and research institutions in science and engineering, has played a very significant and pioneering role in general and sanitary bacteriology, in industrial biology, and in food technology. It has contributed four past presidents of the Society of American Bacteriologists: Professor Sedgwick, Edwin O. Jordan, '88, Samuel C. Prescott, '94, and Charles-Edward A. Winslow, '98. It has made fundamental contributions to the bacteriology of air, water, milk, sewage, and foods and their sanitary applications. It has pioneered in commercial canning, in disinfection, in food processing, and in the use of specific microorganisms for the production of organic solvents and other end products of industrial value. It has played an important role in the thrilling expansion and evolution of the American Public Health Association and in the organization and development of the Institute of Food Technologists. Its students were also intimately involved in the pioneer and far-reaching work of the Lawrence Sewage Experiment Station. The Department of Biology emphasized the relationship of water and milk to the dissemination of disease, and from the earliest stages of the modern program in sanitary science, it was an ardent and convincing champion of water purification, water sanitation and disinfection, milk sanitation, pasteurization, food sanitation, the prevention of food infections, refrigeration, personal and community cleanliness, and all aspects of the applications of evolving bacteriology to personal and community health.

The Department of Biology which Professor Sedgwick organized in 1883 had two options: one in Natural History and the other as a basis for the study



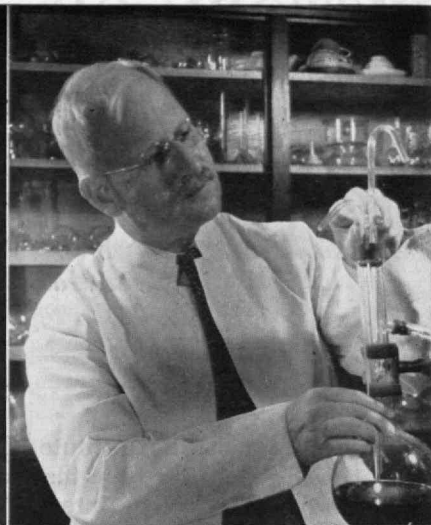
William T. Sedgwick

... founder of the Department of Biology and Public Health at M.I.T. and first president of the Society of American Bacteriologists



Charles-Edward A. Winslow, '98

... leader in bacteriology and public health at M.I.T., College of the City of New York, and Yale University, respectively



Fortune

Samuel C. Prescott, '94

... Head of the Department of Biology and Public Health, 1922-1942; Dean of Science, 1932-1942; founder, Institute of Food Technologists

of medicine. As early as 1883, Professor Sedgwick offered a course in bacteriology entitled "Germs and Germicides." It is difficult for us in 1953 to realize how progressive a step this represented. The year 1882 was really at the dawn of a new era and everyone was not convinced yet of the relationship of germs to infection and disease, not even some who were affiliated with leading medical schools at the time.

In a minute on the late Dr. Alfred Worcester, former Professor of Hygiene at Harvard University, which appeared in the *Harvard University Gazette* (Volume 47, No. 18, January 26, 1952), and which was prepared by A. Chester Hanford, Delmar Leighton, Dr. Reginald Fitz, '05, and Dr. Arlie V. Bock, the following statement appears:

"His reminiscences contain a grim picture of the state of medical education in the early eighties in which only the lectures by a few excellent men commanded his admiration in retrospect. The only mention of the bacterial origin of disease which he heard in the Medical School came from a surgeon who announced that 'those who so wish may believe it. I do not.' I used to regret the small amount of medical education I had received, Dr. Worcester commented, but in later years I began to rejoice that I did not have such a load to forget as overburdened my better educated colleagues."

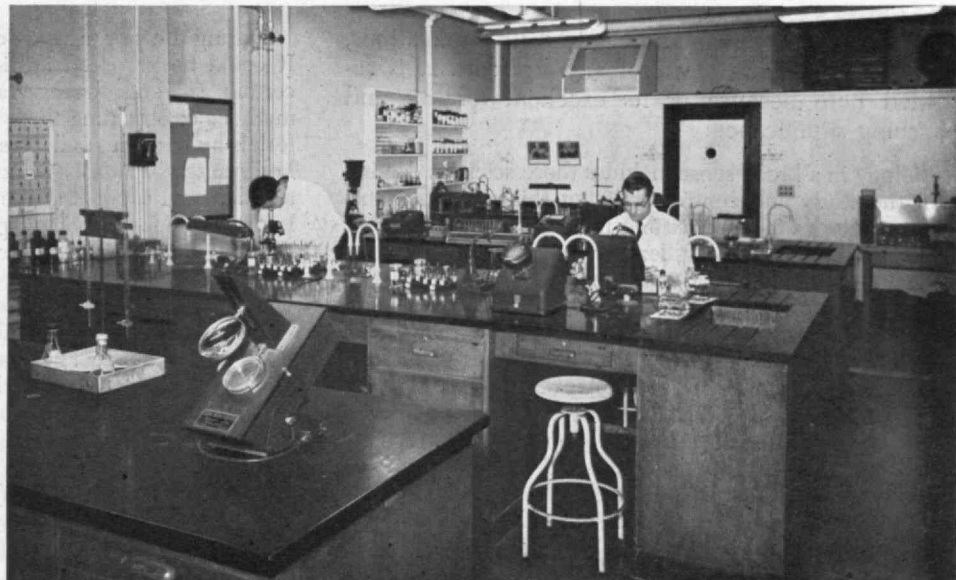
Unquestionably written by Professor Sedgwick, the M.I.T. Catalogue, in 1884, carried the following statement concerning the new Course in Biology which was being offered as excellent preparation for medicine: "The recent remarkable development of the biological sciences, and especially the applications of physics and chemistry to physiology, have led to the establishment of a course of study in which biology is a prominent feature. Aside from the subjects pertaining to a general scientific education, and shared with other courses of the school, the biological student becomes familiar with the anatomy and physiology of normal living things — a familiarity

which is of inestimable value in the study of disease. Equally important is that education of the hand and eye, and that mental habit which comes only from constant use of the microscope, the scalpel and instruments of precision. At first, therefore, are studied such forms as yeast, amoeba, moulds, and *bacteria*, etc." In 1886, Professor Sedgwick offered a course in Hygiene and Public Health. In 1887, the name of this course was changed to Sanitary Science; and later to Principles of Sanitary Science and Public Health — a course that became both popular and famous. Bacteriology was listed as a separate subject in the second term of the fourth year for students in Biology in the Catalogue for 1888-1889, and students in Sanitary Engineering were also required to attend. During the first term of the third year, Professor Sedgwick also offered to students in Biology a course entitled "Biology of Microorganisms" which consisted of lectures, recitations, and laboratory work and which met for 10 hours a week for 15 weeks. Among Professor Sedgwick's early students were: Edwin O. Jordan, '88, Greenleaf R. Tucker, '87, Sidney R. Bartlett, '87, George C. Whipple, '89, George W. Fuller, '90, John L. Batchelder, '90, George V. McLauthlin, '88, Severance Burrage, '92, Albert P. Mathews, '92, Gary N. Calkins, '90, Simeon C. Keith, Jr., '93, and Daniel D. Jackson, '93. A little later, his students included: Samuel C. Prescott, '94, Horatio N. Parker, '94, Charles Gilman Hyde, '96, Charles-Edward A. Winslow, '98, Burt R. Rickards, '99, Arthur I. Kendall, '00, and Edith A. Beckler, '02.

Industrial Biology, as a separate course, made its appearance in the Catalogue in 1896 and was given by Sedgwick and Keith. Keith was a special lecturer in the Department, and there is reason to believe that instruction in Industrial Biology was given by Professor Prescott as early as 1895-1896, even though the course was not listed as such at that time. Bacteriology, fermentations, and sanitary science were being emphasized in the training which the Biology Department provided, while Industrial Biology

A portion of the William Thompson Sedgwick Laboratories of Sanitary Science devoted to instruction as well as to research. These facilities in Building 1 were created in 1945, and the laboratories are named for Professor Sedgwick who founded the Department of Biology and Public Health at the Institute.

M.I.T. Photo



dealt with the applications of microbiology to dairying, vinegar making, and food preservation. The bacteriology of water and sewage was also being emphasized, and in 1896 instruction in bacteriology was being given by Sedgwick and Prescott. In 1897 Prescott assumed major responsibility for instruction in bacteriology, a responsibility which he exercised for at least 20 years. The two major courses in bacteriology were in General and Sanitary Bacteriology. In 1917, Murray P. Horwood, '16, took over the responsibility for these two courses — a duty which he performed until the Department of Biology and Public Health was dissolved in 1944.

The history of bacteriology at M.I.T. can be divided logically into three eras: the Sedgwick era; the Prescott era; and a third which is also divided into three parts — one in sanitary bacteriology, presided over by Professor Murray P. Horwood, '16; a second, in food technology, presided over by Professor Bernard E. Proctor, '23, and Cecil G. Dunn, '30, Associate Professor of Industrial Microbiology; and a third dealing with the biophysics and biochemistry of microorganisms presided over by Professor Francis O. Schmitt, Bernard S. Gould, '32, Associate Professor of Biochemistry, George T. Johnson, Assistant Professor of Botany, Irwin W. Sizer, Associate Professor of Physiology, and the late Professor John R. Loofbrow.

Professor Sedgwick's era emphasized general and sanitary bacteriology, and during his administration many notable contributions to bacteriology, sanitary science, and the public health were made. In 1898, Winslow's thesis was "On the Degree of Bacterial Purification of Water Effected by Freezing, with Special Reference to the Bacillus of Typhoid Fever, and the Purity of Public Ice Supplies." Winslow was soon to be associated with the teaching of the Bacteriology of Water and Sewage and with the operation of the M.I.T. Sanitary Research Laboratory and Sewage Experiment Station. He also initiated a course in Municipal Laboratory Methods in 1904. This course was devoted to the laboratory diagnosis of disease as well as to the testing of disinfectants, the identification of mosquitoes and the sanitary

analysis of water, ice, ice cream, milk, and various fomies handled by school children suffering from communicable disease. Dr. Francis H. Slack, long associated with the Bacteriology Laboratory of the Boston Health Department, began his affiliation with M.I.T. in 1909 as a lecturer in Public Health Laboratory Practice, and subsequently assumed full responsibility for excellent and thorough courses in Public Health Laboratory Methods and in Immunological Methods. He retained his part-time affiliation with the Department of Biology and Public Health until his death in 1932. In 1910, Winslow left M.I.T. to take up his work in bacteriology and public health at the College of the City of New York and to blaze a trail which has resulted in a brilliant and distinguished career.

The Department of Biology at M.I.T. became the Department of Biology and Public Health in 1911 owing to the growing importance of public health as an application of biology and bacteriology. A new course in Advanced Bacteriology was now offered for the first time which dealt with difficult points of bacteriologic technique, the metabolism of the nitrogen, sulphur, iron, photogenic and other special forms of bacteria; with the theories of immunity and disinfection; with bacterial classification, symbiosis and other problems of current theoretical and scientific interest in bacteriology. The program of the Department was expanded to deal with industrial microbiology, dairy bacteriology, bacteriology of the fermentation industries, epidemiology, zymology, parasitology, industrial biology, and so on.

Professor Sedgwick died in 1921 and was succeeded as Head of the Department of Biology and Public Health by Samuel C. Prescott, '94 (now Professor of Industrial Biology, Emeritus). While preparation for work in public health continued to be an important part of the Department program until 1944, more and more emphasis was placed on industrial biology and on food technology. Financial assistance for research in food technology became available and it was natural that the departmental program should develop at an accelerated pace in that direction. The 1926 Catalogue contains a state-

ment pertaining to bacteriology and its applications, which was prepared by Professor Prescott. It is recorded here because of its excellent quality and farseeing significance:

Biology in a broad sense includes those sciences dealing with the study and control of living things, both plants and animals, from the invisible microbe to man himself. Our food supply, clothing, leather, timber and paper are products of biological activity, and the great problems of the health of communities through sanitation and the control of diseases are questions of biology. Great industries have been built through the applications of biological knowledge and the products of these industries amount to billions of dollars annually. Pasteur's work led to the development of the new science of Bacteriology which has revolutionized medicine and sanitation and led to the development of new industries. This opened a new and important era in science, the era of Applied Biology, including Industrial Biology and Food Technology.

Few realize that the industries involving the preparation and manufacture of foods and kindred products from crops and other raw materials stand in first place, and exceed in value of product the iron and steel industry, or automobiles or the textile industry. Food supply is a vast biological and industrial problem. City dwellers are not only dependent on the country districts for food, but the food must be handled, transported and protected from decay or spoilage, or great economic losses may result. England raises less than one half of her required food, and our crowded Eastern states are in a similar position. Thus there have grown up great food industries involving many processes and special problems in biology and bacteriology. These include the huge canning industry, slaughtering, refrigeration and cold storage, drying or dehydration, and the bakery, milk supply and other dairy industries. Over 75 per cent of the bread used in the U.S.A. is a factory product and our whole problem of food supply is rapidly becoming an industrial one. Although great progress has been made in the arts of food manufacture and conservation, food technology is still in its infancy, and the possibilities of the future seem limitless.

With the advance of knowledge pertaining to microbiology, biochemistry and enzymes, new and important processes in which the organisms are utilized have been developed in the Fermentation and Biochemical Industries. Among these are the production of glycerin, industrial alcohol, butyl alcohol and acetone by fermentation, the manufacture of acids and other products used in the tanning and textile industries, and the preparation of vaccines, antitoxins, extracts and other substances used in the protection of man and the lower animals against infectious diseases. New food products of great value may also be made by the use and control of enzymes.

A modern research laboratory in sanitary bacteriology at the Institute is shown below.

M.I.T. Photo



During the war, a vast demand for rubber was created. It could be prepared artificially if adequate amounts of certain solvents were available. Bacteriologists found methods of obtaining them by fermentation of cheap materials by bacteria, and thus developed a great butyl alcohol industry which has since grown to large proportions, and has made possible the Duco finish for automobiles, improved film for moving pictures, better lacquers and a rapidly increasing number of new technical products. This is but one of a number of new processes, some of which have been developed at the Institute, which have great commercial possibilities. In this new and growing field of biochemical research, there is rich promise of future reward not only in the production of solvents, but in the tanning, fibre, rubber and timber preserving industries.

Marshall W. Jennison (later, Associate Professor of Bacteriology) joined the staff of the Department of Biology and Public Health in 1927 following his graduation from M.I.T. the same year. His early work dealt with mildew in cotton cloth. Later he studied the effect of temperature upon certain aspects of bacterial growth curves; and later still he participated in the excellent studies on the high-speed photomicrographs of sneezing resulting from the common cold. He gave courses in bacteriology to students in chemistry and in sanitary engineering, and he was responsible for the courses in advanced bacteriology for the students in Biology.

In 1932, Dr. Slack was succeeded by Dr. John W. Williams. He gave the courses in Public Health Laboratory Methods and in Immunological Methods. His research dealt primarily with the cultivation of bacteria and molds under anaerobic conditions and with the pathogenic fungi that invaded the skin, the hair, and the scalp. He retained his affiliation with the Department until 1944 when the public health program was abandoned.

The laboratory facilities in bacteriology were very simple and limited at first, although reasonably satisfactory provision was made even in the earliest days for microscopes, incubators, and the normal paraphernalia of the laboratory. With the establishment of M.I.T. at its present location in 1916, spacious laboratories, more adequately equipped than ever before, became available. With the passage of time, newer, better and more highly specialized equipment became available, made possible very largely through grants-in-aid of research. In 1932, Professor Prescott reported that "the working equipment of the Department has been materially improved by extensive additions to the supply of high-grade microscopes, bacteriological apparatus, thermal couples for work in testing the efficiency of food sterilization, a high-speed centrifuge, a two-stage vacuum pump, and other special devices for class and research work. Thermostats of unusual sensitivity have been developed by staff members and have made possible significant work on the thermal relations of microorganisms. Special apparatus has also been constructed for the prosecution of highly accurate work in biophysics and biochemistry and for the study of special fermentations and other processes of possible industrial significance." In 1934, a quartz monochro-

(Continued on page 173)



An American at Oxford

By EUGENE B. SKOLNIKOFF

The transition from M.I.T. to Oxford was made, in part, by bicycle trip through the rain and fog, with visibility of 10 yards.

MUCH has been written by Americans on the subject of English and American higher education, and the English have been at least equally interested in expositions and comparisons on the same topic. This article is being added to the list because my experience of the English system at Oxford University is perhaps different from that of most other Americans. With a strict technical background in America, and little contact with liberal arts subjects, other than personal reading, I proceeded to Oxford under a Rhodes Scholarship in 1950, and spent the following two years at Merton College "reading" Philosophy, Politics, and Economics for a bachelor of arts degree. With the background I had, truly much of what I studied was encountered for the first time, and for that reason my impressions may be somewhat different from the impressions of those who had studied similar or related subjects previously. Hence, among readers of *The Review* there may be interest in an American's reactions to, and impression of, the teaching methods, the subjects, and the university life at Oxford in general.

As might be expected, the transition from M.I.T. to Oxford was rather violent; much more so than would be the transition to, say, Harvard or Yale. Matters weren't helped by my first trip to Merton College from the railroad station on the bicycle that I had brought with me. The bicycle trip was a matter of only about half a mile, but I managed to get caught in a sudden rainstorm while trying to balance three pieces of luggage on the bicycle, then tangled my trousers in the drive chain, and finally when I reached cover in the college was told by a minor official: "You're not allowed to park a bicycle there!" At this point, I was ready to head back to Cambridge, Mass., but although the rain in Oxford is not, shall we say, uncommon, the attitude of the people there is not at all exemplified by that first remark. In fact, quite the reverse is true, for the great majority of both students and faculty enjoy having Americans there and are friendly and helpful to them.

The physical layout of the University is different from any American university, for Oxford is essentially composed of some 25 men's colleges and six

women's colleges, each of which is almost an independent entity. The colleges have full control of living, general welfare, and most of the teaching, while the University has no students directly, but only deals with research institutions, libraries, some necessary noncollege lectures, and examinations. Even the entrance examinations are strictly the concern of the various colleges, with the University giving only the examinations for the degree. At times this decentralization works to great advantage for the students, for even the proctors (roughly parallel to university police) have no jurisdiction on college grounds. To the proctors, the definition of an offense is a very broad one, such as being on the street after midnight, but once a student reaches the grounds of his college, he is perfectly safe and out of reach of the proctors. It pays to know the best and fastest ways over the college walls. My college — Merton — was fortunately better than most, in terms of easy access over the walls after hours.

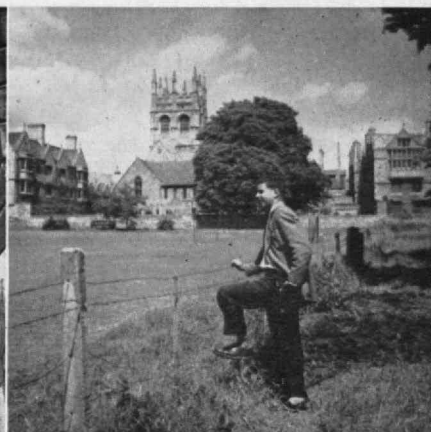
Higher education in England and in the United States differs in a number of ways. A much smaller percentage of English youth go on to a university after secondary school than is the case in the United States; approximately 5 per cent as against 25 per cent in this country. This does not mean that the educational system is any less democratic, for I think it is fair to say that the English secondary education is considerably better than ours. The English obtain their rounded education (which is the goal of most of our undergraduate curriculums) in their secondary schools, and this is helped by the fact that, on the average, an Englishman will be one or two years older than his American counterpart upon graduation from secondary school. Thus, instead of being forced to give students a smattering of many subjects, essentially the universities provide programs for specialization much as our graduate schools do. In many ways the parallel with our graduate schools is an apt one, for the caliber of teaching, the proficiency of the students, and even the percentage of the total youth attending (about 5 per cent attend graduate school in the U. S.) approximate one another very closely. It is worth emphasizing that, because only 5 per cent go to the university, and the



On Magdalen Bridge, with Magdalen Tower in the background.



The High, main thoroughfare at Oxford, with its inevitable bicycles.



Merton College was better than most in terms of easy access over the walls.



Rowing is a popular student activity where, as shown here, students are gathered at the boathouse of Merton College for an intramural race.

students should then be really the "cream of the crop," the level of instruction can be considerably above that prevalent in most undergraduate liberal arts colleges in this country.

Certainly the most important part of the Oxford educational method, and that which was so different and stimulating to me, was the tutorial system that is used exclusively in the liberal arts and even for a good part of the sciences. The workings of the tutorial system are relatively simple: the student usually spends an hour a week with his tutor, and each week has responsibility to prepare an essay (mine averaged about 1,500 words) on the subject set by the tutor for that week. The subjects are designed to cover most of the syllabus that the student is expected to know for the series of examinations given in the space of one week at the end of the normal three-year residence. Incidentally, the student's grades, and the awarding of the degree, depend upon his success in these examinations. These are the only examinations covering subjects of instruction that are required, although a set of qualifying examinations on many subjects is given two-thirds of the way through the first year.

In my case, a course of study, entitled Philosophy, Politics, and Economics, but popularly called "Modern Greats," was followed. This course is rather unusual because it consists of more than one major subject. It is of recent origin at Oxford and, in a way, is Oxford's concession to modern conditions that demand a preparation for more than English or History alone. Even now, it is barely accepted, and is frowned on by many at the University. I had to prepare for eight examinations (two papers in each of the above subjects and two extra in Economics which I chose as a major study) and had a different tutor for each subject (three in all). I had to complete the program in two years instead of three, and thus for each of the three terms a year, I studied for two of the papers. Such a program required two tutorial sessions and two essays a week. At each tutorial conference the tutor would name the topic for the following week (for example, the "Mind and Body Controversy" in Philosophy) and suggest the reading for that topic. After doing the reading, I would write a paper that would cover the views of the modern philosophers that first raised the question, the comments and criticisms of later important philosophers, and my own opinions and ideas on the question. The volume of writing and reading that was required at first appeared rather staggering to me, and one of my tutors once remarked humorously (?) to the other tutors of the college that because I was a former scientist and an American at that, he wasn't at all sure that I would be able to write. The results at least were better than that prediction.

The advantages of the tutorial system of teaching quickly became evident. It enables a student to spend all of his time on one subject, without the disturbances inherent in dividing time between five or six different subjects. He can read exhaustively in the subject under discussion, and bring his knowledge together as a coherent whole when writing the essays. Thus, the two main objectives of an educational system — the ability to think, and a knowledge of the subject — are superbly achieved. I think that Oxford considers the first of those objectives (put in another way as the discipline of the mind) as the primary objective; but I am convinced there is no better way to learn material thoroughly. It doesn't seem conceivable to me that I could have learned and retained as much as I did in two years under any other system of instruc-

tion. Starting with essentially no knowledge in most subjects studied, I believe I came away with a background in arts subjects that could only have been attained under a course system in considerably more time and probably with less chance for retention.

Very valuable in themselves are other incidental advantages of the tutorial system. One of the most important is the close relations developed between the tutor and his pupil. Each tutor would have at most about 10 to 15 students, so that (depending on the tutor and the student, of course) a very rewarding and stimulating relationship may be developed. Such fellowship is also helped by the fact that the tutor lives in the college or nearby, and spends most of the time there. With approximately 200 students in Merton College, the tutors and students live closely integrated lives. One further favorable characteristic of the tutorial system is the responsibility it places on the student, since the amount of work he does and what he gets out of it are, to a great extent, up to him. The immediate pressure of examinations is not present and there is no rule that essays must be a specific length. The result is that students feel that the work is their own, and do it because they like to, not because they are forced to. The difference this attitude makes is marked and of great benefit to the caliber and value of the study.

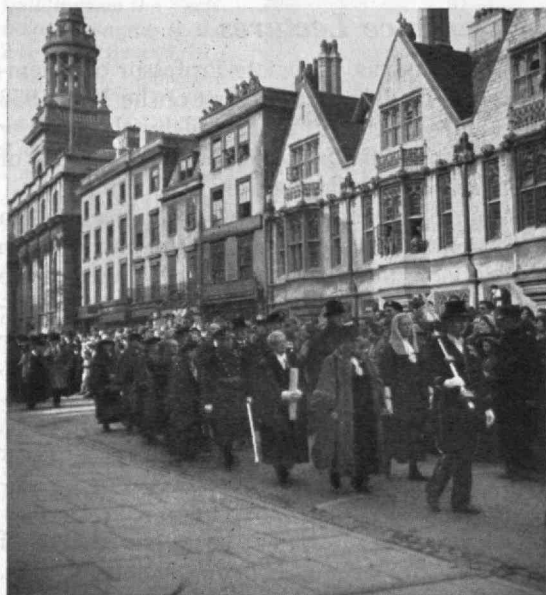
Although I think more is gained than lost, naturally there are disadvantages inherent in the system as well. For one thing, lectures become relatively divorced from the day-to-day studies. Thus, there is seldom the incentive of attending lectures to help with immediate work, and if one is pressed for time, it is hard to maintain attendance solely on the long-term basis. As a general comment, the lectures at Oxford and their method of delivery were a disappointment to me. The European style of lectures is used, which means that the lecturer delivers his talk without any comment being made from the floor. The result is that the lecturer has no direct way of determining how well his thoughts are penetrating his audience. A bad lecturer will remain bad, while a good lecturer would have to be born that way; his ability appears to rest on pure luck.

The tutorial system also runs afoul of a problem that is acute in America and is becoming more serious in England: the shortage of faculty to handle the large numbers of students. Oxford has a higher ratio of faculty to students than any American university, I am sure, and it is partly because of this that they are able to maintain this teaching method which, in a sense, uses teachers so uneconomically.

A further disadvantage of the tutorial system is that the damage done by one bad tutor in Oxford can be much more serious than that done by one bad professor here. When a student's major contact is with only one person, a great deal depends on the caliber of that person. To this criticism it can be said that this danger is recognized and great care is taken in the selection of tutors. Certainly, I was highly impressed, almost universally, by the men that I came into contact with, although a few mistakes are made occasionally.

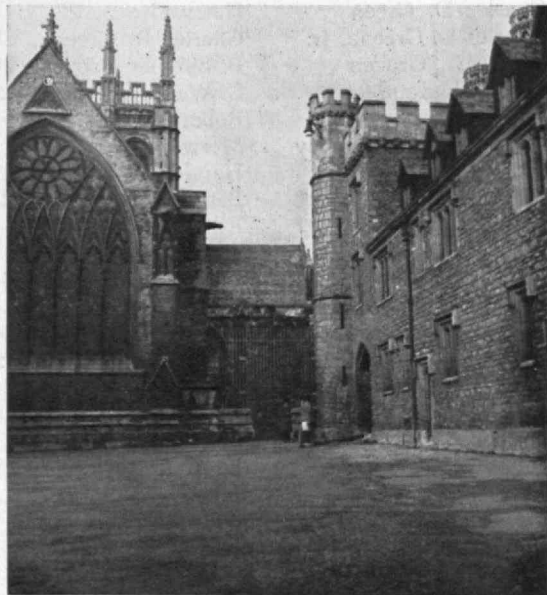
So far, the tutorial system has been considered only in relation to liberal arts subjects. Attempts to apply it to a science curriculum, however, are not so successful, I believe, for here, perhaps, the student is left too much "on his own." It is usually so very much easier to learn technical subjects from a closely co-ordinated lecture class and study program, that studying alone becomes time consuming and highly inefficient. The same cannot be said of the arts programs, probably because there one deals with an inexact subject that must be attacked intensively and so extensively that a great deal of reading must be done whether or not there also are lectures. The study of any arts subject cannot be condensed into one book, mainly because it is impossible for one person to write an exhaustive and comprehensive book. A specific technical subject can be so condensed and can be comprehensively treated. Arts subjects need interpretation, discussion, and many opinions, to a degree that most technical subjects do not require. I should add, however, that learning science under a tutorial system does appear to train a student for more original thought than our course system usually does. This is borne out by the very high grade of basic research done in England

(Continued on page 176)



◀ City of Oxford procession at the proclamation of the Queen's Accession. ▶

Chapel and front quadrangle of Merton College at Oxford. ▶



All photos by the author.

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Among the New Registrants

MEMBERS of the largest class ever to register at M.I.T. included 48 whose parents are Alumni of the Institute. Of the 945 freshmen enrolled last September, this group of 48 is within one of matching the high of 49 from the alumni ranks in the 1948 registration. Technology's curriculum holds interest not only to young men but to young women, as well, as we note the names of the Misses Disario of Caracas, Drew of Ossining, N.Y., and Wahl of Chicago, in the following list:

Student

Arthur E. Albert
Philip W. Almquist
Charles W. Bacon
Donald W. Barnby
John R. Blackmer
Lawrence W. Blodgett
Robert S. Borghesani
John C. Cardinal
Manuel R. Castellanos
Ronald C. Clark
Samuel M. Cluett
Stephen N. Cohen
John C. Congdon
John E. Cotter
Edward J. Devlin
Caroline M. Disario
Ralph D. Dopmeyer
James McC. Dougherty
James W. Dow
Emilie Drew
David F. du Pont

Parent

Sidney G. Albert, '29
Frederick O. A. Almquist, '23
Charles B. Bacon, '29
Herbert A. Barnby, '23
Franklin H. Blackmer, '20
Emmons W. Blodgett, '24
William H. Borghesani, '26
Paul J. Cardinal, '24
Manuel R. Castellanos, '27
Waldo B. Clark, '19
Gorham Cluett, '33
George Cohen, '26
Howard W. Congdon, '09
Edward J. Cotter, '34
Edward J. Devlin, '24
Gabriel M. Disario, '28
Arthur L. Dopmeyer, '20
Isaac Dougherty, '21
Melvin C. Dow, '26
Thomas B. Drew, '23
Lammot du Pont, '01
(deceased)
Freeman H. Dyke, '20
George P. Edmonds, '26
Franklin T. Flaherty, '21
Bion H. Francis, '29
Harry Green, '23
Charles R. Greene, '29
B. Sumner Gruzen, '26
G. Warren Hamblet, '26
Robert W. Hart, '24
Merwin L. Hathaway, '26
Harold L. Hazen, '24
Barrett G. Hindes, '22
Edgar Horton, '24
J. Rowland Hotchkin, '21
Robert M. Kimball, '33
Robert H. Lawson, '24
Richard V. McKay, '06
Hector A. Moineau, '27
Winslow C. Morse, '22
Leonard C. Peskin, '29
Otmar Praznik, '27
John F. Reynders, '28
John S. Saloma, '29
Max J. Steinberg, '22
Henry C. Stillman, '21
Arnold S. Wahl, '13
James J. Wolfson, '20

Peter D. Dyke
Andrew W. Edmonds
Franklin T. Flaherty, Jr.
Bion H. Francis, Jr.
Charles D. Green
Charles R. Greene, Jr.
Jordan L. Gruzen
James E. Hamblet
Stanley R. Hart
Jonathan H. Hathaway
Nathan L. Hazen
Peter C. Hindes
William E. Horton
William F. Hotchkin
Philip P. Kimball
Walter R. Lawson
Thomas W. McKay
Edward J. Moineau
David C. Morse
Richard L. Peskin
Anthony Praznik
John R. Reynders
John S. Saloma, 3d
George N. Steinberg
James D. Stillman
Rosemarie Wahl
Daniel J. Wolfson

Air Science and Tactics

THE appointment of Colonel Glenn C. Coleman, U.S.A.F., as Head of the Department of Air Science and Tactics at the Institute, has been announced by John E. Burchard, '23, Dean of M.I.T.'s School of Humanities and Social Studies. A graduate of the United States Military Academy in 1938, Colonel Coleman has had a distinguished career with both the Army and the Air Force. He holds the Legion of Merit, the Bronze Star, and the *Croix de guerre*.

During World War II he served as executive to the Signal Officer of the 8th Air Force from 1942 to 1944 when he was assigned to the XIX Tactical Air Command with the responsibility of preparing signal plans for that unit's part in the invasion.

After the end of hostilities in Europe, Colonel Coleman was assigned as signal officer with the 5th Fighter Command in the Philippines and later in Okinawa where he served until the Japanese capitulated. Following duty in the Pacific, Colonel Coleman returned to the United States to direct communications for units in the Strategic and Tactical Air Commands, and in 1946 joined the Task Group 1.5 which conducted the first full-scale atomic tests on Kwajalein and Eniwetok.

In 1947 Colonel Coleman entered the Graduate School of the University of Illinois where he received the degree of master of science in electrical engineering in June, 1949. He was then appointed deputy commander of the Cambridge Research Center where the Air Force conducts its primary research in electronics and geophysics.

In December, 1950, Colonel Coleman undertook a special mission to Korea to study equipment evaluation and requirements in the field.

Popular Science Lectures

LOCKHART B. ROGERS, Associate Professor of Chemistry at M.I.T., delivered the first of the 1952-1953 Popular Science Lectures, sponsored by the Society of Arts at the Institute, on December 14. The title of his address was "Analysis, the Key to Chemistry."

The Popular Science Lectures are presented in Huntington Hall (Room 10-250) at the Institute on Sunday afternoons at four o'clock. The balance of the program includes the following addresses: "Aeroelasticity and Plane Design" by Raymond L. Bisplinghoff, Associate Professor of Aeronautical Engineering, on January 18; "Billion Volt Accelerators" by M. Stanley Livingston, Associate Professor of Physics, on February 15; and "Mechanical Vibrations - Their Control" by Jacob P. Den Hartog, Professor of Mechanical Engineering, on March 22.

Tickets for the lectures may be obtained free of charge by sending a request to the Society of Arts, Room 4-434, M.I.T.

For Human Behavior Studies

ALEX BAVELAS, '48, Associate Professor of Psychology in the Department of Economics and Social Science at the Institute, is one of 45 scholars who have been awarded grants of \$5,500 each by the Ford Foundation. The grants will be used for research in fields related to human behavior, and Dr. Bavelas will apply his grant to studies of the psychology of communication.

The grants, which total \$247,500, represent an important part of the program of the Foundation's Behavioral Sciences Division to "support scientific activities designed to increase knowledge of factors which influence or determine human conduct." This is one of the five general areas of activity assigned to the Foundation by its trustees; the other four are the advancement of peace, education, democratic institutions, and economic stability.

The 45 grants went to faculty members of 15 universities in the United States. Specialized fields represented are anthropology, business administration, economics, education, history, political science, psychology, and sociology. Some of those who received awards are acknowledged leaders in their fields, and the others are promising young scholars. The Ford Foundation made its selections for these awards on the basis of recommendations submitted by a committee of leaders in the broad field of the behavioral sciences. Dr. Bavelas was born in Chicopee, Mass., in 1913. He received the degree of bachelor of science from Springfield College in 1940, master of arts from the State University of Iowa in 1944, and doctor of philosophy from M.I.T. in 1948. He was a research assistant at the State University of Iowa before joining the Institute staff as an instructor in economics in 1944. Two years later he became a research associate in economics, and in 1947 Dr. Bavelas was appointed assistant professor of psychology. He was promoted to associate professor of psychology in 1949.

Stratigraphy and Petroleum Geology

THE appointment of Ely Mencher, '38, formerly Senior Field Geologist and Research Geologist with the Socony Vacuum Oil Company of Venezuela, as Associate Professor of Geology in the Institute's Department of Geology and Geophysics has been announced by George R. Harrison, Dean of the School of Science. At M.I.T. Dr. Mencher will conduct courses in stratigraphy and petroleum geology, and will continue his research on the geology of South America.

Born in New York City in 1913, Dr. Mencher received the degree of bachelor of science from the City College of the City of New York in 1934, and was awarded the degree of doctor of philosophy from M.I.T. in 1938.

From 1935-1938 he was a teaching assistant at M.I.T. and instructor in geology, Summer Session, City College of New York, from 1936-1938. From 1938 to 1943 he was professor of geology at the School of Geology, Central University, Caracas, Venezuela, and held the post of technical director at the school in 1941-1942.

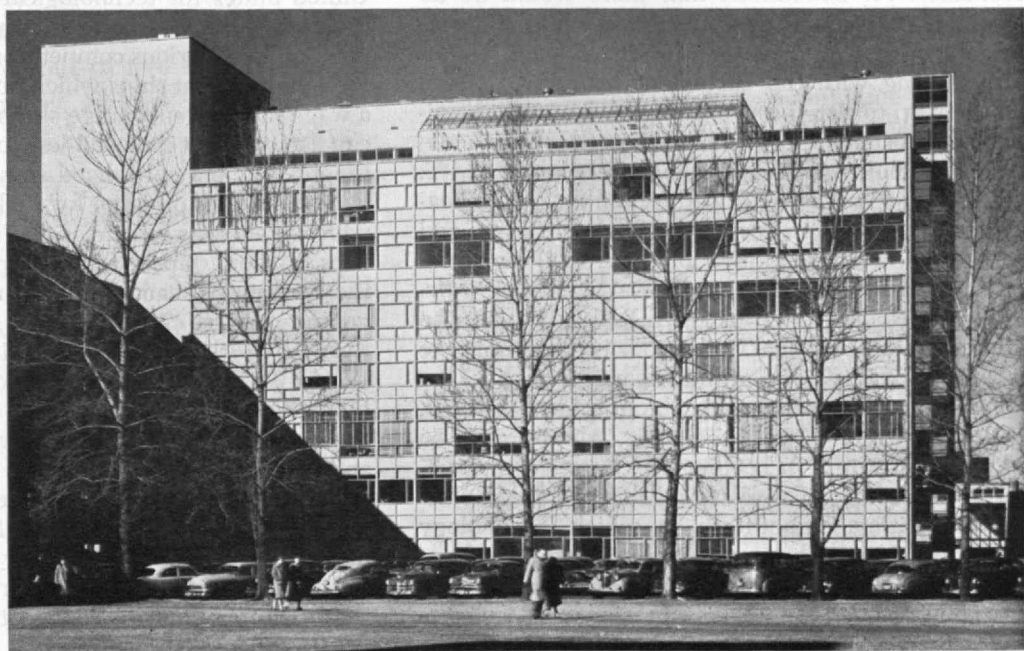
Since 1943 he has held positions of increasing importance and responsibility with the Socony Vacuum Oil Company of Venezuela, including the posts of Senior Field Geologist and of Research Geologist. He has carried on a varied program of geological field work and research in Venezuela, Colombia, and Puerto Rico, and has contributed a number of articles to professional journals in geology.

Dr. Mencher served as a member of the Organizing Committee of the Venezuelan Petroleum Congress that met in Caracas in 1951, and was chairman and editor of the geological part of the *Proceedings* of this Congress. The *Proceedings* were published this year in both English and Spanish by the Venezuelan Government. He also served as a director of the Venezuelan Association for the Advancement of Science for 1952, and as co-ordinator of its Geological Section during this year's sessions.

Skyscraper among the buildings on the Technology campus is the eight-story John Thompson Dorrance Laboratory of Biology and Food Technology. This view was taken early in December, shortly after personnel from the two Departments had moved into their new quarters. Formal dedication ceremonies are planned for the late spring.

The building housing the Eastman Research Laboratories of Physics and Chemistry is at the left, and casts its shadow on the new facilities for biology and food technology.

M.I.T. Photo



Alumni Council Meeting

THE last program of the Alumni Council for the year of 1952 provided a wide variety of interesting features to all of the 149 members and guests who attended the 292d meeting of the Council on November 24. As president of the Alumni Association, Edwin D. Ryer, '20, opened the dinner meeting which was held at the Faculty Club in the Sloan Building.

The regular order of business included the introduction of guests (among whom were seven past presidents of the Alumni Association), and reports by Donald P. Severance, '38, Secretary and Treasurer, and Henry B. Kane, '24, Alumni Fund Director. In addition, James R. Killian, Jr., '26, President of the Institute, spoke on the many ways in which Alumni took part in aiding the administration of M.I.T. affairs; Sir Richard Livingstone, Carnegie Visiting Professor of Classical Literature and former Vice-Chancellor of Oxford University, gave his impressions of the Institute; Edward L. Cochrane, '20, Dean of the School of Engineering and former chairman of the Federal Maritime Board, spoke on the work of this Board while he was on leave of absence from M.I.T. as the Board's administrator; and a motion picture film, "Men of Science," formed parts of the evening program.

In his report as secretary, Mr. Severance stated that between October 28 and November 21, there were 17 members of the Institute's staff who had visited 22 M.I.T. clubs in points as far away as Caracas, San Juan, Puerto Rico, Miami, Birmingham, Tulsa, Duluth, and Portland, Maine.

Royal Barry Wills, '18, chairman of the Midwinter Meeting Committee, reported that plans for this event were well under way, and that an excellent program would be offered. Harold Bugbee, '20, presented the report for the Committee on Audit and Budget for its chairman, Raymond H. Blanchard, '17, who was unable to attend. As director of the Alumni Fund, Mr. Kane stated that 4,601 Alumni had contributed to the Fund \$74,555 — as compared to 3,250 who contributed \$51,900 at the corresponding time a year ago. President Ryer announced that there would be no December meeting of the Council as the normal meeting date comes very close to Christmas.

In keeping with the custom of bringing Council members up to date on events at the Institute, President Killian spoke on the many ways in which Technology Alumni contribute to the well-being of M.I.T. The strong upward trend in the number of applications for admission to next year's freshman class, and the recently formed Educational Council are both activities in which Alumni play a significant role. Under the chairmanship of H. B. Richmond, '14, the Committee on Historical Collections is continuing the work, for many years faithfully carried on by Miss Julia M. Comstock, of preparing biographical sketches, with portraits, of Faculty members. Alumni are also aiding the Institute in keeping its courses of instruction in the forefront of teaching, through the departmental Visiting Committees on which Technology graduates serve. In the past, Visiting Committees have been effective in helping the Administration to find outstanding scholars to take important posts on the teaching staff. Alumni also serve as members of the

M.I.T. Corporation, and at present, 24 of the 34 life members of the Corporation are Alumni. Each year, the Alumni Association nominates three alumni term members for five-year terms, and the president of the Alumni Association is ex officio a member of the Corporation of the Institute.

Sir Richard next discussed his impressions of M.I.T. One important difference between the English universities and M.I.T. is that there is nothing comparable in England to the M.I.T. Alumni Association which is requested to take part in a constructive review of educational policy. Alumni take no significant part in the financial support of their colleges and universities, and organize primarily for social activities.

Sir Richard compared English secondary schools and their American counterparts by outlining his observations on the maturity of English and American students who enter college. It was his impression that British students are better prepared for college entrance, but that American students generally exhibit greater interest in their college studies. In England there is a strong tendency to keep to tradition and to make changes slowly in curriculums, and students tend to specialize at an earlier age than their American cousins. Sir Richard commented on the willingness of American colleges to experiment in new educational methods, and spoke favorably of the advantages of the humanities programs offered at technical institutions, such as M.I.T. It was his belief that, whatever else he acquired at college, every graduate should leave his alma mater with a philosophy of life as a guide to educated, mature living.

President Ryer then introduced Dean Cochrane who, in 1947, returned to the Institute as head of the Department of Naval Architecture and Marine Engineering, after completing 37 years of service in the U.S. Navy. In 1950, Admiral Cochrane was granted leave of absence to serve as chairman of the Federal Maritime Board which had then been reorganized. Dean Cochrane discussed the need for an effective merchant marine, capable of carrying American cargo, and that of other friendly nations, who look to the United States for technological assistance. Although such a merchant marine is desirable from a national point of view, serious competition is encountered from foreign merchant ships which do not maintain as high a wage rate. To encourage shipping under the American flag, without financial loss to shipping companies, the government subsidized shipping operations. The millions of tons of cargo for such programs as that in which grain was sent to India, and the thousands of trips to India, Japan, and Europe in connection with the Korean War and the North Atlantic Treaty Organization were cited as striking examples of the effectiveness of the merchant marine since the end of World War II. Dean Cochrane concluded his address by giving a brief description of the new liner, *United States*, which was compared with the *Queen Mary* and the *Queen Elizabeth*.

Council members were treated to a showing of a 15-minute sound film, "Men of Science," a documentary short subject prepared by R.K.O.-Pathé for its institutional series "This is America." The film records the Institute's contributions to technology and living in an industrialized society.

BUSINESS IN MOTION

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According to the popular conception it is the function of a mill or factory to fill orders, control costs, and maintain quality. However, in the case of Revere the mills in addition serve creatively in close cooperation with Sales, the Technical Advisory Service, and Research. This four-way organization is closely-knit in the common interest of serving the customer.

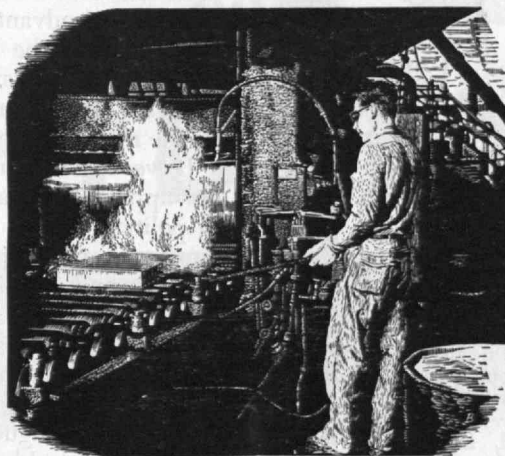
When an order comes to a Revere mill, it is of first concern to the Methods Department, which sets up the mill procedures required to meet customer specifications, thus in effect acting as a representative of the customer. Methods may consult with the T.A., the Laboratory, the Works Manager, and even individual operators.

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give our men a personal interest, a feeling that their work in making strip, sheet and plate, tube and pipe, bar and rod, and extruded shapes contributes to better products and better living. Our internal house organ, the "Revere Patriot," carries articles about customers and how they use our metals, and about our distributors and how we help them serve their customers.

So important are the Revere mills and the people who man them that quite often customers visit them to learn about mill operations. And mill personnel in turn go into customer plants. This interchange of information about mill methods on the one hand and customer fabrication processes on the other is extremely valuable. Adjustments on both sides make possible either better customer products or lowered costs, or both.

The mills, in other words, are just as important to Revere customers as Sales, Technical Advisory Service and Research, which in combination give mills and customers the help needed, and in return receive it from them. When we have an order that literally must be handled with gloves and especially wrapped, all the people in the mill take great pains with it, not only out of a sense of pride in a good job, but because they realize that satisfied customers produce the orders that make jobs possible for us all.



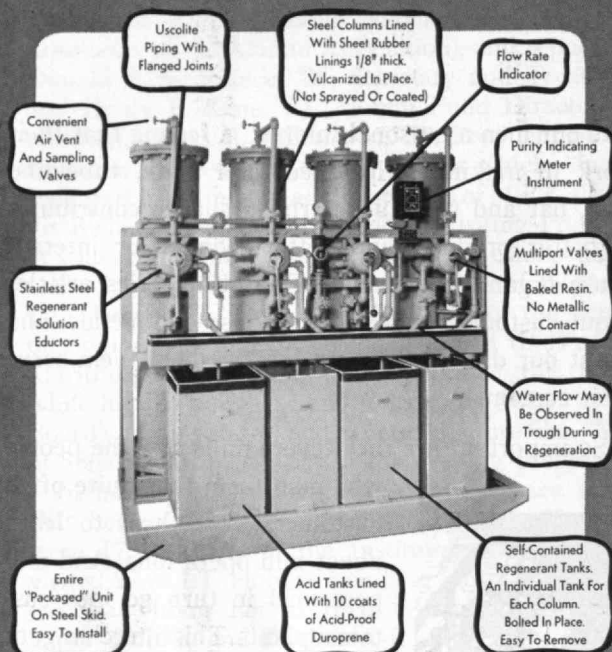
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THE TWO PHILOSOPHIES

(Continued from page 150)

The result has been a false philosophy of human relations; the intolerable development of fear, wrong values, superficial compromises and dishonesty which have never led to constructive solutions. By using such methods, we have denied each other freedom to work together, and have continued to make men slaves — slaves even of their need for power to enslave others. Naturally we have been plunged into one destructive conflict after another. We are not whole; we are only spliced together. It's worse than that. Some of the pieces of our wholeness are missing, and until we are able to provide the missing pieces there will be a spiritual emptiness in our relation to each other.

Here, then, are the two basic philosophies of which all others are but variants: on the one hand, the philosophy of finding the true nature of things and co-operating with them in terms of that nature; on the other hand, the philosophy of domination — by enticement if possible, by coercion if necessary.

These two philosophies affect three groups of people: the few who seek the truth and who want right answers, no matter where the answers may lead, or what old gods are demolished in the process; the more numerous who want power over other people for personal advantage, no matter what deception is involved; and the multitudinous many who mistakenly think they want someone else to take responsibility for them, no matter how they may be exploited by the masters who seemingly protect them.

If we would earnestly seek and honestly adopt in our approach to raising children, to labor relations, to politics, and to religion the same self-correcting approach of objective observation, penetrating thought, and intelligent questioning of old ideas we have used with technological problems, the rewards over a few decades would be equally immense. We could overthrow the rule of fear, deception, irrationality, dishonesty, superstition, and destructive conflict which now plagues the interdependence of men around the world. We could make this interdependence secure and productive. We could do it as surely as we have overthrown the fear of our dependence on nature. But it can never be done as long as nationalism keeps us fearing each other, or religious dogma separates us, or repetitive wishful thinking misleads us, or political indoctrination deprives so many youths

(Continued on page 164)

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THE TWO PHILOSOPHIES

(Continued from page 162)

of their right to think for themselves at the very age when they should first be standing on their own feet.

What happens to science when the scientist adopts the philosophy of you-will-find-what-you-want-to-find? Mr. Hitler and his Aryan race offer an example in the social sciences, and the results, though influential for awhile, came to ruin because they were not based on truth. Currently the Russian plant breeder, Lysenko, is saying, "If you want to get a particular result, you will get it." In other words, truth is whatever you wish it to be. Is it, either in science, or in politics, or in religion? More than 300 years have gone by since most men of science decided that it was not.

Our trouble is not so much that we have concentrated on material things and ignored spiritual things; it is that we have attacked our spiritual problems and our material problems with virtually opposite methods. In human relations we have tried to conquer; in science we have tried to understand the nature of what we were dealing with and to co-operate with that nature. In the one area we have sought "power over"; in the other, "solution with." The contrast in results is as great as the difference in method. King Canute got nowhere ordering the sea back, but by co-operating with the laws of nature the Dutch have held it back for more than 300 years.

But what about power? It cannot be avoided in any consideration of either science or of human relations.

The greatest obstacle to co-operation does not seem to be authority over other people, but power in the hands of people who personally profit from that power and who use it with scheming self-interest. In human relations, as in science, it is not power but its misuse which does damage.

The problem is to see that interpersonal power is used in a constructive, well-integrated manner, whether it be the power of parents, of teachers, of labor, of management, of the clergy, or of government officials. This cannot be accomplished unless and until the philosophy of domination is honestly replaced by a self-correcting philosophy of unceasing search for more adequate truth by rational methods. We must accept as proven that — and only that — which the body of competent opinion around the world will accept as tested and proven. If we are to live amicably we need to adopt such standards, even in the field of religion.

The argument that without hope of heaven or fear of hell men become unmanageable, reveals the subconscious idea of power over other people behind these teachings. It also is a commentary on the political concept of God which accompanies them. There is imperialism in religion wherever there is a political philosophy behind religion. But what kind of God would create people who must be controlled by coercion or enticement, people who are born evil, people who become virtuous only by being saved from themselves through overcoming themselves as they were

(Continued on page 166)

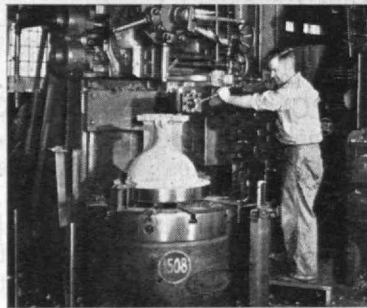
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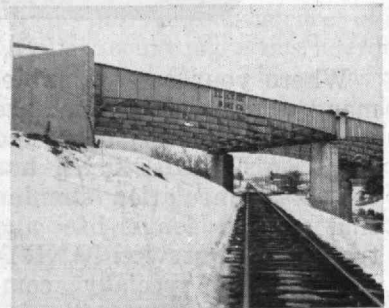
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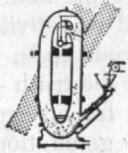
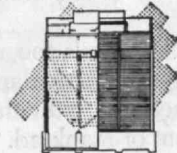
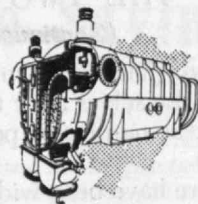
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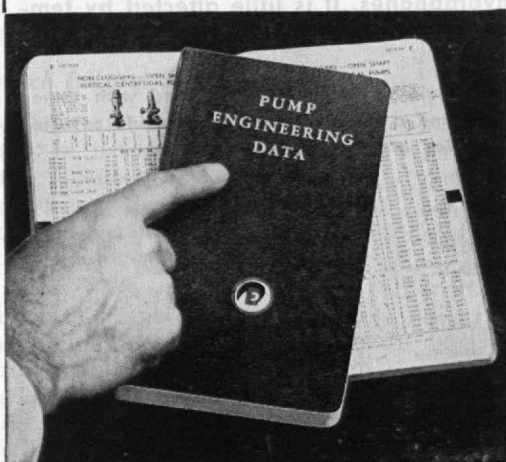
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THE TWO PHILOSOPHIES

(Continued from page 164)

created? (This is not to be confused with overcoming their false selves after they have been forced outside their true natures by people who wanted power over them.)

There have been wide differences between the scientists and the clergy, but unless God is inconsistent, there cannot be difference between true science and true religion. The scientist quarrels with the clergyman's idea of God; not with the assumption of a creator who divided the light from the darkness, who made the firmament, and who caused the earth to bring forth living things by processes we cannot explain.

Men have built too many fences between science and religion, particularly since both are fundamentally concerned with the understanding and the improvement of mankind. True science and true religion cannot be separated. Both are international in organization and in activity. Both should have to do with humanitarian ends. Both should uncompromisingly search for the truth — without prejudice. The laboratory looks for an expanding revelation of truth with every new generation. If the sanctuary would follow the same philosophy, might not the result be equally rewarding? Because Jesus was a healer we have not hesitated to go forward with medical research. Because He was a law giver we have not disbanded the legislators. Because He was a great moral leader are

we to believe that to challenge or to inquire further in this area is heretical? "He that believeth on me, the works that I do shall he do also; and greater works than these shall he do." [John 14:12]

Educated people living in the Twentieth Century regard as suspect any nailed-down answers in the field of science. They should regard nailed-down answers as equally suspect in politics or in religion. We have gone far beyond Archimedes, Galileo, and Newton. We are in the process of going beyond Darwin and Freud. We need to progress beyond Cicero and Catiline. Nor should we stop there.

Certainly not all moral truth is already known. In 1600 the natural philosophers were saying that there remained nothing new to learn about matter. Such statements can be made only by men who know little. We shall probably never know all there is to know about anything. How much of the whole truth do we know about an atom, to say nothing of a blade of grass? It is obviously foolish to say that all moral truth is already known. It is equally foolish to say we cannot adopt any religious codes because we know so little about moral truth. Because we do not know all the secrets of the atom is no reason not to practice chemical engineering. Oliver Heaviside said, "Shall I refuse my dinner because I do not understand the process of digestion?" How far would progress go did we refuse to act until we knew all? An increase in knowledge requires action . . . and intelligent evaluation leading to new knowledge. Thus no increase in

(Continued on page 168)

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Outside Diameter:	.150"
Net Weight:	22 pounds per 1000 ft.
Resistance of the copper conductor:	16.0 ohms per 1000 ft.
Resistance of the inner shield:	10.8 ohms per 1000 ft.
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(a) the conductor and inner shield:	42 mmf per foot
(b) the inner shield and outer shield:	100 mmf per foot
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(a) the conductor and inner shield	10,000 megohms per 1000' at 25°C.
(b) the inner and outer shield	5000 megohms per 1000'.
Voltage Rating, Dielectric Test, and Breakdown Voltage:	
(a) between the conductor and inner shield	600V AC rating, 1500V test, 4000V breakdown
(b) between inner and outer shield	300V AC rating, 1000V test, 3000V breakdown
Noise Characteristics:	When subjected to vibration or instantaneous physical compression such as demonstrated by gripping with a pair of pliers, the measured induced voltage is less than 20 milli-volts.

Price for quantity ordered at one time:

250 ft.	\$29.30 per 100 ft.
500 ft.	27.00 per 100 ft.
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Availability and cost of the source will generally determine the future of Cobalt-60 teletherapy.

The chief saving comes from the need for a smaller space in which to house the Cobalt-60 source. Until it becomes available at much lower cost, or another artificial source is accessible, the super-voltage x-ray machine will not be supplanted by artificial radioactive sources.

General Electric Review
November, 1952



C. G. SUITS

Research Laboratory

THE ENGINEER IN INDUSTRY: Technology is based on science, and science seems to be boundless. Engineering is becoming more complex and specialized as new subject matter is added at an ever-increasing rate.

Increasing complexity of engineering practice is not leading to greater regimentation of the engineer, but rather to the contrary. While a project such as the development of an atomic reactor requires a high degree of co-ordination of many technical skills, the variety of such skills employed by modern industry provides a broad selection from which an individual may

choose his field of specialization.

Thus, a great range of individual interests may be accommodated within the confines of a large co-ordinated project activity.

Continuing research will undoubtedly lead to new developments in science which will lead to new applications in engineering. This technological process appears to be an inexhaustible natural resource.

Yale University
New Haven, Connecticut



H. A. WINNE

Engineering

THE ATOMIC-ELECTRIC POWER INDUSTRY: It is unfortunate that our entry into the atomic energy era was by way of the atomic bomb—and when I say that I am not thinking at all of the use of the bomb. It seems to me that we may have entered the development path at the wrong end.

Most people undoubtedly feel that atomic energy development is so vastly expensive that it would not have come about unless government undertook it.

We certainly would not have had the atomic bomb, at the present time, nor submarine atomic power plants scheduled for the near future, without government financing, but I am not at all sure that we shall have a sound atomic-electric power industry sooner than we would have had if this development had taken a more normal course in the interested private industries.

Various studies now under way contemplate the possible construction of atomic-electric power plants, designed to produce plutonium, with electric power as more or less of a by-product.

This situation would not constitute a sound basis for an atomic-electric

power industry. Certainly, barring war, at some time in the future our atomic bomb stockpile should reach an adequately high peak, and the government would not then be justified in continuing to purchase the plutonium output.

Atomic-electric power will be economically sound only when it can compete with conventional electric power without requiring a government-supported weapons market. It could not do that today—unless in some very peculiar and unusual circumstances—nor, in my opinion, for a good many years to come.

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R. BLOUNT

Lamp Division

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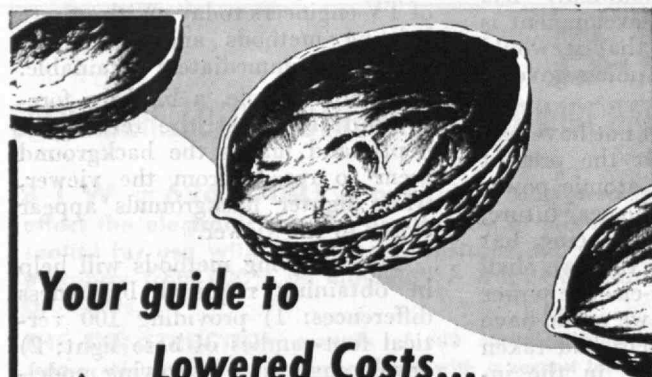
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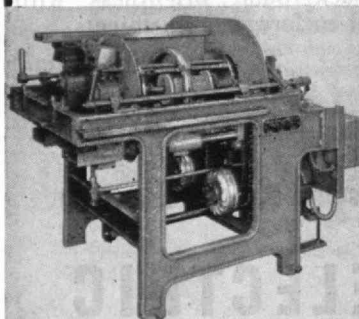
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THE TWO PHILOSOPHIES

(Continued from page 166)

knowledge is ever more than a series of approximations, each, we hope, coming closer to the ultimate truth.

No true seeker can ever be arrogant for long in his conviction that he has the whole answer. The real blasphemy is believing that we have answers that are ultimate and final; that we know the whole truth. We do not and we never can understand God, but by adopting the philosophy of the scientist we can discover more and more of the laws by which He causes the planets to revolve, the grass to grow, or a family to be held together in love.

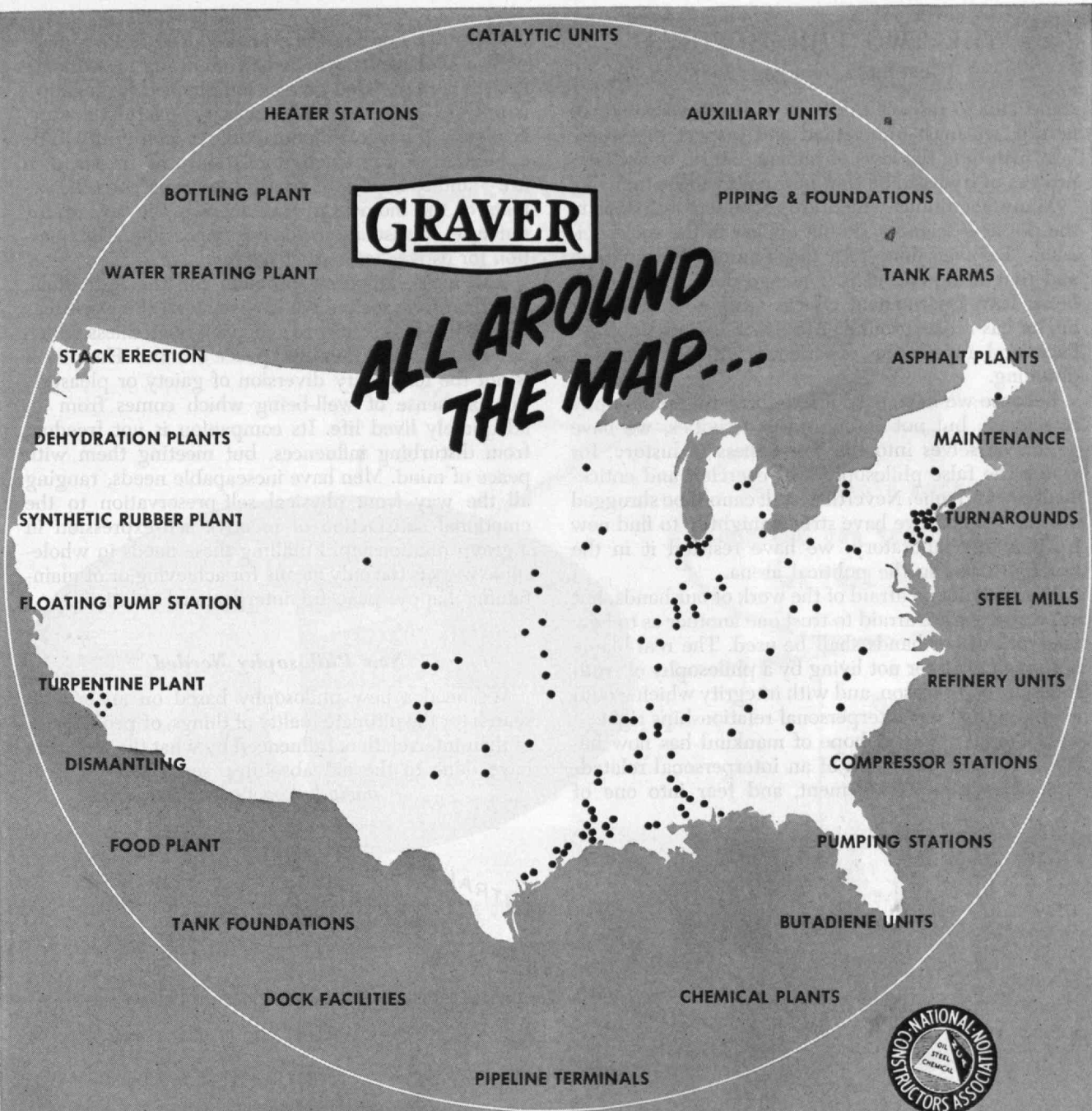
In order to have a happier world we do not need better brains, nor do we need to change human nature, any more than the scientists have needed to change nature. As they changed their approach to nature, so we need to change our treatment of human nature. For co-operation and happiness we need only to adopt in industry, in religion, in politics, and in the home — giving them edge as well as new shape — the same self-correcting philosophy which has taken the scientists so far, so fast, in the last 200 years. Despite its extraordinary results, the scientists themselves have only half believed their professional philosophy. They have accepted it as true in the laboratory, but they have ignored it in the other areas of their lives.

To a certain extent, perhaps this state of affairs is understandable. The behavior of a lever is certainly more simple to analyze and to comprehend than is a living being. Certainly it is now much easier in the physical sciences to break down a problem into elements to be analyzed, to isolate the variables, to establish criteria for measurement, and to repeat, test, and corroborate experimental evidence in the physical sciences, than it is to carry out similar operations in the science of human nature. Even in the physical sciences we have not yet learned how to deal effectively with highly involved and complicated processes, but we have no hesitation in trying to find a solution. Furthermore, we must recognize that the economic and social sciences introduce interacting relationships of a kind already encountered in such physical sciences as chemistry, physics, and biology. Such present difficulties as these are no more serious than many that have been solved in the past. Already some of them are being overcome by the self-correcting philosophy of the scientist.

As before, the first requirement is an honest attempt to find the facts, no matter how disagreeable. As before, this requires rejecting the old dogmas which led us to reach conclusions before we even knew what questions to ask. As before, we need not only the courage to look, but the capacity to see.

Let no one attempt to tell us that progress cannot be made because men do not have adequate laboratory techniques. What laboratory techniques did science have in 1700? We can and we must develop techniques. In our homes, our churches, our factories, and our offices we must all search for what will stand up under critical examination. We must fearlessly reject everything else. It is not enough for us to under-

(Continued on page 170)



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THE TWO PHILOSOPHIES

(Continued from page 168)

stand and to respect the laws of the government of nature; we must understand and respect the whole law, including the laws of human nature. In the very process of trying to do this, new laws will be found.

Many conditions which are extremely valuable in the physical sciences, do not appear in the social sciences. Damage done to a machine can be repaired, and that is the end of it. Damage done to a human being leaves permanent effects. Once Johnny tells a lie, he has a background. After that he can never go back and repeat the experience without this conditioning.

Because we have used a self-correcting philosophy in science, but not in our other activities, we have gotten ourselves into the worst mess in history, for which the false philosophies of coercion and enticement are to blame. Nevertheless, it cannot be shrugged off that whereas we have striven mightily to find new truth in the laboratory, we have resisted it in the sanctuary and in the political arena.

We need not be afraid of the work of our hands, but at present we are afraid to trust one another as to how the work of our hands shall be used. The real blame lies on *all of us* for not living by a philosophy of truth found through reason, and with integrity which would lead to setting our interpersonal relationships right.

The great task and hope of mankind has now become the transformation of an interpersonal relatedness of coercion, enticement, and fear into one of

cooperation. For this, the prime requisite is a populace with a philosophy which will allow us to work together. To say, "God give us enlightened leadership," is only to "pass the buck" in lazy, wishful thinking. Each one of us has an inescapable responsibility to be a builder of constructive relationships in his own life — and to be it with a faith that transcends the defeats of the moment. Relatedness is the law of the universe. It is isolation which is impossible. The question for us is *what kind of relatedness?*

The most important problem for the individual, and therefore, for the world — since all the world has individuals — is how to achieve a relatedness which will result in happiness and peace of mind. Happiness is not the temporary diversion of gaiety or pleasure, but the sense of well-being which comes from an adequately lived life. Its companion is not freedom from disturbing influences, but meeting them with peace of mind. Men have inescapable needs, ranging all the way from physical self-preservation to the emotional satisfaction of creative self-expression in a group relationship. Fulfilling these needs in wholesome ways is the only means for achieving or of maintaining happy, peaceful interpersonal relations.

New Philosophy Needed

We need a new philosophy based on an orderly search for the ultimate reality of things, of people, and of their interrelation. Influenced by what the scientists have done to the old absolutes, some metaphysical
(Concluded on page 172)



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THE TWO PHILOSOPHIES

(Concluded from page 170)

philosophers have come to the cynical conclusion that nothing has significance. They see only destruction, brutality, and frustration for all humanity. For them the universe turns out to be nothing more than a variety of forms of energy, all moving in aimless chaos. Man is no more than an electrocolloidal phenomenon without spiritual significance or ultimate purpose.

Such pessimism is not justified. All that has happened is a demonstration that the old concepts are inadequate. We are not born sinful. We are born seeking what gives us happiness, and wanting to avoid that which gives us pain. The fact that we are more happy in a loving relationship than we are in a fighting one would convince the natural scientist that loving relationships are closer to the reality of mankind than destruction, brutality, and frustration. His philosophy, applied to human relations, would even lead him to believe that man was intended to experience beauty; to be treated with dignity; to have self-respect, inspiration, friendship, happiness, hope; to be whole and wholesome.

Exactly as the scientist begins with something small he can handle, correcting his mistakes as he goes along, each of us must begin with himself, and widen out from there to the family, the community, the factory, the nation, and finally to the world. Only thus can we make our dependency on each other secure. There is no other road by which to achieve freedom to work together co-operatively, for there is no other philosophy consistent with the highest standards of religion, morality, and human values.

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BACTERIOLOGY AT M.I.T.

(Continued from page 154)

mator and a micromanipulator were added. In 1938, a Warburg apparatus was obtained through a grant from the American Academy of Arts and Sciences for research on bacterial metabolism.

With grants-in-aid of research by the Rockefeller Foundation in 1936 and subsequently by other agencies for work in the fields of biophysics and biochemistry, much new and highly specialized equipment for work in the broad field of biology, including microbiology, became available. The equipment included x-ray diffraction units, electron microscopes, polarization optical apparatus, apparatus for investigating ultraviolet and visible absorption spectra, Raman spectra, emission and fluorescence spectra, high-frequency and high-voltage electrical fields, cold rooms, refrigerated centrifuges, ultracentrifuges, ultrasound producing devices, mechanisms for producing mono- and polynuclear films, radioactive tracer devices, quick-freezing apparatus, dehydration equipment, pressure cookers, radiant heaters, and a large array of normal but expensive equipment required today in any laboratory engaged in fundamental and carefully controlled research activity. The great emphasis in fundamental research which has occurred in the United States during the past 30 to 40 years, has been reflected in the activities and in the rich and varied laboratory facilities now available at M.I.T.

Reference must be made to two men now actively associated with the work of the Department of Food Technology who participated in the teaching and research programs in microbiology in the former Department of Biology and Public Health. Professor Proctor, Director of the Samuel Cate Prescott Laboratories of Food Technology and also Head of the Department of Food Technology, has been associated with the teaching of mycology, industrial microbiology, and technology of food supplies for many years. In 1933, he initiated a series of important studies into the microbiology of the upper atmosphere in collaboration with the Department of Meteorology at M.I.T. More recently, in collaboration with Samuel A. Goldblith, '40, Assistant Professor of Food Technology, he has studied the germicidal properties of high-voltage x-rays and cathode rays in connection with the sterilization of foods, antibiotics, enzymes, and other organic substances. He has also been in-

(Continued on page 174)

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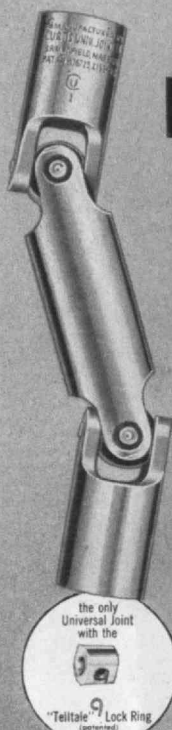
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BACTERIOLOGY AT M.I.T.

(Continued from page 173)

terested in solving numerous microbiological problems associated with the processing, handling and shipping of foods.

Professor Dunn has also participated actively in the teaching and research programs in Food Technology and in particular with the courses in Bacteriology, Mycology, and Industrial Microbiology. In 1937, he inaugurated a course in Germicides and Antiseptics which dealt with the basic principles in theory and practice of chemical and physical disinfectants, germicides, and fungicides. He investigated old and new germicidal agents, including the quaternary ammonium compounds and their relationship to industry; medicine and agriculture. He has also been interested in detergents and other cleansing agents.

The influence of Dr. Prescott on the life and activities of the Department of Biology and Public Health has extended almost over its entire career and has had a profound and far-reaching effect on its brilliant achievements. Joining the Department as an assistant in 1895 after his graduation in 1894, he has been actively and intimately associated with its teaching and research programs until his retirement in 1942. He has taught general bacteriology, bacteriology of water and sewage, dairy bacteriology, bacteriology of foods, mycology, industrial microbiology, zymology, industrial biology, technology of food supplies, technology of food products, and various other subjects. His researches have been equally broad and far-reaching and he has contributed in a significant manner to every one of the fields of microbiology in which he taught. He has made contributions to the bacteriology of water supplies, milk supplies, and food supplies. He has studied the microbiology of dehydrated, refrigerated, and quick-frozen foods. He has also studied the microbiology of textiles and fibers and the relationship of microorganisms to the production of organic solvents, organic acids and other commercially valuable end products. He has investigated almost every aspect of food preservation from a microbiological standpoint as well as the relationship of foods to disease. His record of achievement is remarkable for its extent, its magnitude, and its significance.

Dr. Horwood, Professor of Sanitary Science, was associated with the teaching and research programs in bacteriology in the Department of Biology and



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Public Health from 1916 to 1944. From 1917 to 1944, he was responsible for the two broad and basic courses dealing with General and Sanitary Bacteriology. Because of the administrative changes which occurred in the Biology Department in 1944, he has since been affiliated with the Sanitary Engineering Program at M.I.T. where he has continued his work in General and Sanitary Bacteriology. His contributions have dealt with problems pertaining to the bacteriology of water supplies and swimming pools; the bacteriology of household dusts and of the hands of food handlers; the bacteriological problems associated with the manufacture of edible gelatin and their solution; the possible evolutionary relationship between *Aerobacter aerogenes* and *Escherichia coli*; the bacteriology of eating and drinking utensils; the bacteriology of milk and food supplies; the factors influencing the germicidal properties of ultrasound; and the biology and biochemistry of the floc-producing organisms in the activated sludge process.

In the wake of financial support for teaching and research in biophysics and biochemistry obtained from the Rockefeller Foundation, the Administration at M.I.T. decided in 1942 to abandon the public health program in the Biology Department in 1944. A new staff was brought in and a radical reorientation of interest and emphasis occurred. Public Health was dropped from the name of the Department. Dr. Horwood became affiliated with the Sanitary Engineering Program in 1945. The William Thompson Sedgwick Laboratories in Sanitary Science were established in the Department of Civil and Sanitary Engineering in 1947, and the Option in Food Technology in the Biology Department was set up as a separate Department in 1946. The Biology Department which had established such a splendid record in sanitary bacteriology, industrial biology, and food technology now places particular emphasis in its teaching and research program on the biophysics and biochemistry of microorganisms, on enzymology, and on pigment production among molds.

Happily the interest in sanitary bacteriology and in food technology at M.I.T. has not been abandoned, but is going forward with increased zeal in the Sedgwick Memorial Laboratories in Sanitary Science and in the Samuel Cate Prescott Laboratories of Food Technology. The laboratories are well equipped and staffed, and accordingly we may continue to expect with confidence numerous further contributions to microbiology, in pure and applied science, in the years that lie ahead.

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AN AMERICAN AT OXFORD

(Continued from page 157)

which compares extremely favorably, percentage-wise, with the basic research done in this country. On the other hand, the English system also results in a deficiency of personnel capable of taking the original basic work and carrying it forward to a practical development. In England the practical side of technology, which requires a thorough training in method and technique, is being sacrificed for the theoretical, which requires more fundamental and, in a way, less extensive study. Perhaps we have gone too far the other way in the United States.

In my opinion, the advantages of the undergraduate curriculum at Oxford do not carry over to the graduate curriculum, and in this respect I believe the American universities are better. The requirement for an advanced degree at Oxford consists almost wholly in the production of a satisfactory thesis. In some cases, a qualifying examination must be taken, but this is not meant to do other than weed out the obviously poor candidates. Thus, for the research and writing of the thesis, a student is almost completely free to make his own program, except for occasional discussions with a single supervisor. Of course, students are free to discuss problems with anyone, but such intercourse with the faculty is fostered to a much greater extent by our system of courses, teaching fellowships, and so on, than by the English system. Oxford maintains the philosophy of "putting a student

on his own," but the opportunity to establish close relationships with one's tutors is lost (or at least diminished) for the graduate student. Graduate schools in the United States usually increase the chances that a student will establish intellectual fellowship with faculty members. At the same time, American universities also make a student depend on his own ambition and skill more than he ever has before.

In reality, the Oxford system of education depends on much more than merely the methods of teaching, although a thorough discussion of its other aspects would carry this article on indefinitely. In the training of the students, the atmosphere at the University, the sports (or, rather, "games"), the many and varied clubs and organizations are all considered of importance equal to that of teaching. Lectures or tutorials are never scheduled between 1:00 P.M. and 5:00 P.M. so that there will be no interference with sports. This position represents a fine, if unusual, attitude to an American.

Tradition plays a large role too. I found that studying in my rooms, in a building built in 1418, seemed easier and more natural than studying ever did at M.I.T.; the fact that students had worked there for 500 years seemed to permeate the rooms and make studying the natural thing to do. I must admit, however, that the scholastic asceticism that dictated lack of sufficient heating facilities sorely tried my studying abilities, especially during the worst part of the justly famous English winter.

(Concluded on page 178)

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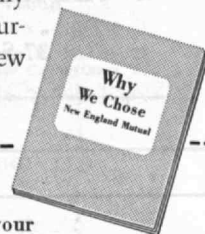


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AN AMERICAN AT OXFORD

(Concluded from page 176)

The role that the University is supposed to play in student life can be gauged from the fact that a good percentage of the work is supposed to be done during vacations, and 28 weeks a year are allotted to holidays or recreation. To some extent, I did follow the rule of work during vacation, but I also managed to see a lot of Europe!

One little custom, whose value still puzzles me, is the dress that must be worn during examinations. Dark suits, white shirts, white bow ties, black shoes and socks, and academic gown must be worn and a mortarboard must be carried, if not worn. This dress is required during the traditionally warmest week of the English year, near the middle of June. Perhaps such dress makes for fine tradition, but aside from giving the American students something to talk about when they return to the United States, its value seems, to me, questionable at the least.

When one considers the absolute freedom of the University from any sort of outside control, it is astonishing to learn that something like 90 per cent of the students at Oxford are receiving a government grant of one sort or another.

My impressions of Oxford University and its teaching methods are, perhaps, a natural reaction of an American student with a technical education at M.I.T. The two years I spent at Oxford were a great and new experience to me, and were, I like to think, of great value. The only unfortunate part of this is that such an experience is still relatively rare, although it is becoming less so; the value of interchange of students between countries is inestimable, but the potentialities are still largely untapped. It is no longer true that the best education must, necessarily, be acquired in Europe, but it is now true that the educational systems of Europe and America complement each other in a way that probably makes the best education a combination of the two. The great benefits to be derived from the opportunity to see and experience other countries and people at first hand is of inestimable value to those who may be fortunate enough to acquire part of their education in a foreign country. On the basis of my two years abroad, it appears that any extension of international student exchange is a positive gain in our educational opportunities and in international understanding, which should certainly be fully exploited.

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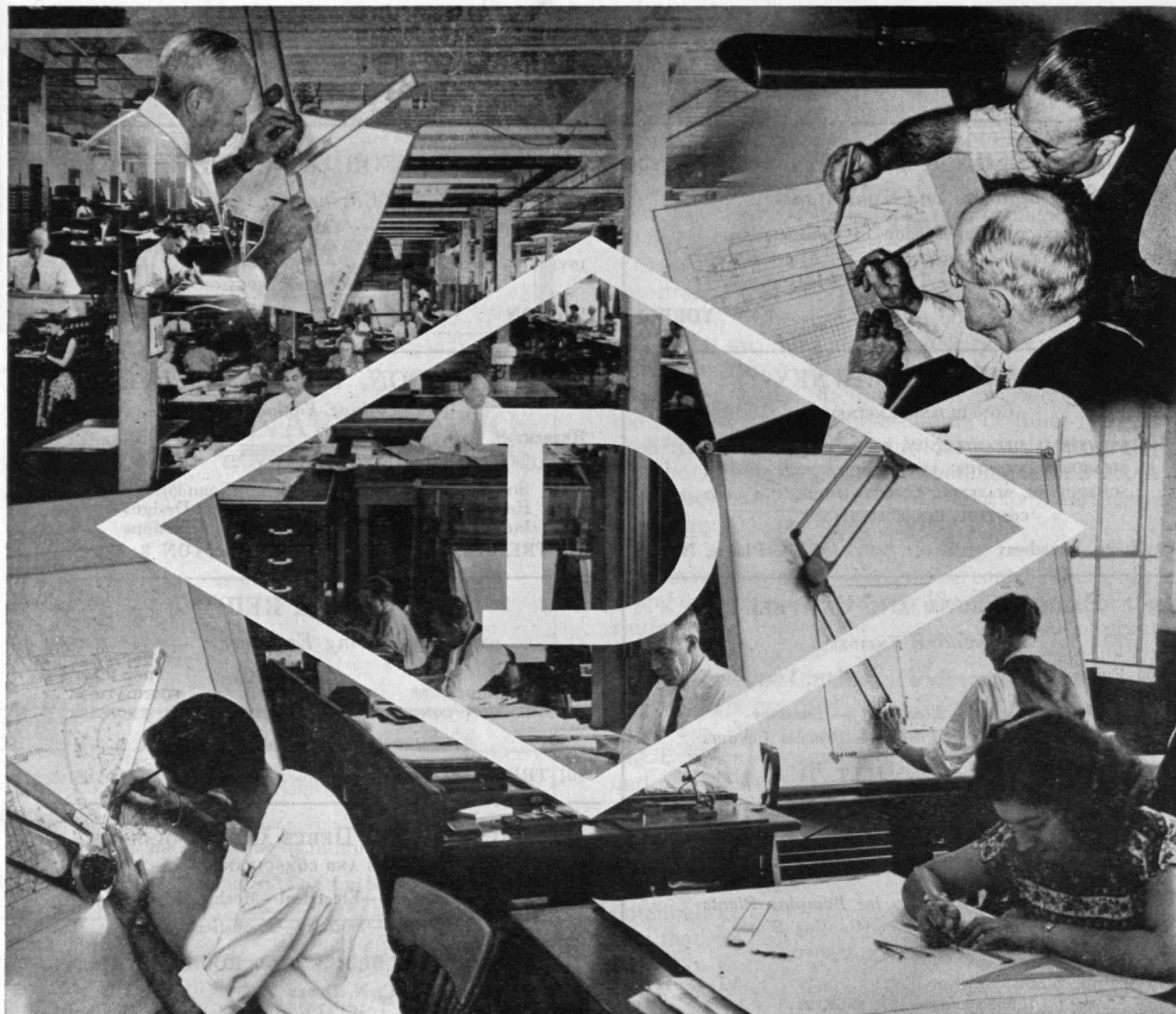
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Alumni AND Officers IN THE News

Men of Science

The Institute and some of its outstanding Alumni figure prominently in a 15-minute sound film, *Men of Science*, a documentary short prepared by R.K.O.-Pathe for its institutional series, "This Is America." The film, photographed in Cambridge during the summer and early fall of 1952, was required to meet the standards of entertainment for theatrical showing; but it relates, as fully as possible in the time allotted, the contributions of M.I.T. to industry and humanity. It will be shown in 8,000 theaters during the next year or so, and it is expected that copies of the film may be available from the Institute for showing at local alumni gatherings.

Among the prominent Alumni singled out for special mention in this documentary film are: ALFRED P. SLOAN, JR., '95, Chairman of the Board, General Motors Corporation; CLARENCE D. HOWE '07, Minister of Trade and Commerce of Canada; CHARLES EDISON '13, formerly Governor of New Jersey; DONALD W. DOUGLAS '14, President of Douglas Aircraft; and VANNEVAR BUSH '16, President of the Carnegie Institution of Washington. In addition, the film shows many Alumni and nonalumni members of the Faculty in action at the Institute.

Honors and Awards

The American Trade Association Executives presented the 1952 Award of Merit for National Associations to the National Fire Protection Association, of which PERCY BUGBEE '20 is general manager and HORATIO L. BOND '23 is chief engineer. The award was given to the association "for having rendered outstanding service to the industry which it represents as well as to the American Public."

CRAWFORD H. GREENEWALT '22 was awarded the 1952 Chemical Industry Medal of the American section of the Society of Chemical Industry in New York on October 31. Mr. Greenewalt received the honor for "conspicuous service to applied chemistry," and his picture appears on the cover of the November 10, 1952, issue of *Chemical and Engineering News* (with news and biographical write-ups included) in connection with this specific occasion.

OSCAR H. HOROVITZ '22 was recently notified by the United States State Department that his film, *Ice Follies*, had been judged by the Italian Olympic Committee as the best in the Eighth International Competition of Sports Films for amateur photographers. In addition to winning this Olympic Award, Mr. Horovitz has been elected a fellow in the Amateur Cinema League.

CHARLES A. THOMAS '24 has received a 1952 Missouri Honor Award from the University of Missouri in recognition of

his distinguished careers of leadership in research and development and in scientific societies; for his part in the atomic energy program; his development of rocket fuels and synthetic rubber; and for his public-spirited activities as a good citizen of the country, state, and his home community of St. Louis, Mo.

The city of Lynn, Mass., presented its first distinguished citizens award to REAR ADMIRAL THEODORE C. LONNQUEST '25, chief of the Bureau of Aeronautics. Admiral Lonnquest received the award for his outstanding contributions on the national scene.

The 1953 Browder J. Thompson Memorial Prize of the Institute of Radio Engineers has been awarded to RICHARD C. BOOTON, JR., '52, for his paper entitled, "An Optimization Theory for Time-Varying Linear Systems with Non-stationary Statistical Inputs," which appeared in the August, 1952, issue of the *Proceedings of the I.R.E.* The award is bestowed annually on an author under 30 whose paper constitutes the best combination of technical contribution and presentation of the subject.

Elections and Promotions

Upon the retirement of BRADLEY DEWEY '09 as president of Dewey and Almy Chemical Company, and his subsequent election as chairman of the board, HUGH S. FERGUSON '23 was elected president and chief executive officer of the company, effective this January.

ALBERT S. GOLEMON '25 has been elected president of the Texas Society of Architects. Mr. Golemon, who specializes in institutional design, is a member of the architectural firm of Golemon and Rolfe, Houston, Texas.

The new dean of students at the California Institute of Technology is PAUL C. EATON '27.

JANE L. HASTINGS '40 has been chosen chairman of the Connecticut Valley section of the American Chemical Society.

One of three new members appointed by the President to the General Advisory Committee of the Atomic Energy Commission is JAMES B. FISK '31.

Alumni Authors

The December, 1952, issue of *Atlantic Monthly* contains an article written by Dr. JAMES H. MEANS '06, entitled "The Best Medicine for the Patient."

SAMUEL V. CHAMBERLAIN '18 is an important contributor to an interesting new book, *Bouquet de France* (New York: Gourmet, Inc., November, 1952, \$10.00), which features a collection of recipes from provinces of France, garnished with many photographs (around 150), etchings, and pencil drawings by Mr. Chamberlain.

CHARLES S. DRAPER '26, WALTER MCKAY '34, and SIDNEY LEES '48, all of the Department of Aeronautical Engineering at M.I.T., have collaborated on a book in three volumes entitled *Instrument Engineering* (New York: McGraw-Hill Book Company, Inc., 1952).

WILLIAM M. MURRAY '33 is the editor of *Fatigue and Fracture of Metals: A Symposium* (copublished by The Technology Press, M.I.T., and John Wiley and Sons, Inc., New York, 1952). The book, for which a foreword was written by JEROME C. HUNSAKER '12, is a report of a symposium held at M.I.T. in 1950.

AMOS J. SHALER, '40, HOWARD F. TAYLOR, '46, and JOHN WULFF, staff, all of the Department of Metallurgy at M.I.T., are authors of *Metallurgy for Engineers: Casting, Welding, and Working* (New York: John Wiley and Sons, Inc., 1952, \$6.75).

A new second edition of *Invertebrate Paleontology*, by ROBERT R. SHROCK, staff, Head of the Department of Geology at M.I.T., and W. H. Twenhofel, has been published (New York: McGraw-Hill Book Company, Inc., 1952). The book is called one of the most complete and systematic treatments of invertebrate fossils yet published.

Obituary

- ROBERT W. SCOTT '83, October 2.
- GEORGE A. SMITH '83, November 12.*
- RICHARD D. CHASE '92, October 18.*
- HUNSDON CARY '95, September 17.
- WELLES M. PARTRIDGE '96, October 31.*
- GEORGE W. TREAT '98, August 25.*
- REUBEN S. HENDERSON '99, July 5.*
- CARL L. MORGAN '99, October 15.*
- HERBERT H. ALBEE '00, November 10.*
- CLARENCE C. BROWN '00, September 16.*
- ALEXANDER H. B. JEFFORDS '01, November 10.*
- WILLIAM P. CROSS '03, October 8*
- ROBERT S. CLARK '06, September 17.*
- LOUIS A. THOMPSON '06, February 27, 1949.*
- SYLVESTER C. WOLFE '06, June 23.*
- HARRY N. BURHANS '07, September 6.*
- PAUL G. W. ANDERSON '10, July, 1952.
- GEORGE W. FORRESTER '13, date unknown.
- HARRY D. PECK '13, August 25.*
- EDWARD S. PRATT '15, September 13.
- MAX C. GOLDBERG '21, November 16.*
- ROBERT J. BUCKLEY '22, date unknown.*
- MELVIN J. FIRST '22, September, 1952.*
- RODNEY C. RANKIN '23, November 11.
- GORDON F. HOOK '24, November 5.*
- FRED T. PATTON '24, April, 1952.*
- JOSEPH H. GAYLORD, JR., '27, October 19.*
- ARTHUR R. KEITH '28, October 12.
- LAWRENCE P. ABARE '30, September 10.*
- WILLIAM J. LARKIN, JR., '30, August 2.*
- ERIK B. HANSELL '38, August 10, 1950.
- *Mentioned in class notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Albany

The first meeting of the winter season was held on November 19 in the East Room of the Hotel Wellington. The guest of honor at the dinner meeting was Richard B. Adler'43, Assistant Professor in the Electrical Engineering Department at M.I.T. Professor Adler, who was on a one-week tour of the secondary schools of the upper Hudson Valley, gave a very interesting talk on the general admissions program at the Institute. The talk did a great deal to stir up interest in the Educational Council among those present, and it is hoped that before long the Club will be in a position to take a more active part in helping with this program.

A short business meeting of the Club was also held to make plans for the coming year. Present at both the dinner and the meeting were: Andy Allen'12, Ralph Bates'14, George Conway'25, William Canaday'12, Reed Dallye'22, Frank Gilson'24, Harold Hedberg'20, John Longley'33, Dave McLeod'50, Edwin Schatz'23, Russell Suter'00, and Warren Wilber'34. Carl J. Bernhardt'28 was also present as a guest. — DAVID B. McLEOD'50, Secretary, 536 Providence Street, Albany 8, N.Y.

Boston Luncheon Club

The second meeting of the 1952-1953 season was held at the Union Oyster House on November 20. Sixty members and guests were present.

The speaker at this luncheon meeting was M.I.T.'s John B. Rae, Associate Professor of History, and coauthor of *The United States in World History*. His topic: "The Election and Our Relations with Western Europe." In particular, he discussed the Marshall Plan, the various systems of western world relationship in theory and in practice. Also, he advanced his own opinion that the permanent solution of America's partnership with the western world must not depend on an attempt to purchase good will by subsidizing Europe. He emphasized his feeling that our American markets must be made more accessible to western Europe if we are to bolster the economies of the countries within the dollar area and simultaneously rid this country of a multibillion-dollar load.

The Boston Luncheon Club will continue to meet once a month, with its next meeting scheduled for January 15, at which time E. P. Brooks'17, Dean of the new School of Industrial Management, will be the speaker. — CHENERY SALMON'26 (for the committee), The Mer-

chants National Bank, Securities Analysis Department, 28 State Street, Boston, Mass.

The M.I.T. Club of Chicago

It is not often that a club secretary receives such a fine eyewitness report of a club function that he would be well advised to use it verbatim in the club notes. However, such is the case with the combined report of the M.I.T. Club of Chicago's "Fall Tonic Tour," submitted by Grace Ferrall and Mickie Wise, who accompanied their husbands, and Bob Faurot, 2-44, tour chairman, which follows:

"Every year, for the past four years, a group of members and guests of the M.I.T. Club of Chicago from all parts of the city and the suburbs, as well as from northern Indiana, have converged upon the Dearborn Street Station at noon on a Friday in late October. There they board the special cars reserved for them on the orange and gray Monon Diesel train bound for French Lick.

"At the rear is the private car of John Barriger'21, who, with his wife Elizabeth and daughters Ann and Betty, are our gracious hosts for the trip. This year the trip was the week end of October 24. As usual, the Barriger's hospitality was exceptional, and we'd like to thank them again, this time in print, for all they do to make these trips so enjoyable.

"At 12:30 P.M., the diner opened for lunch and at 1:00 P.M. the train pulled out. At Hammond, John and Mabel Fitzgerald's ('02) daughter, son-in-law, and two grandsons — the J. W. Halleys — came aboard, along with Chuck and Lois Morton'47. After lunch, there were card games, scenery gazing, visiting, and so on. At Newcastle, Martha Crenshaw, a freshman at DePauw, was at the station for a glimpse of her parents, Brandy'24 and Ruth, and Aunt Martha Crenshaw, who were on the train.

"There were refreshments during the afternoon, and later a delicious dinner. The M.I.T. cars were detached from the rest of the train, which goes to Louisville, and taken directly to French Lick Springs, where they stood waiting in front of the fine old hotel, not far from the wide front steps with the potted chrysanthemums along each side. Although some stayed up for dancing, many rushed to bed to insure their being in top form next day.

"Saturday dawned bright and clear, and beautiful, as it has every year. There was breakfast in rooms, or in the west dining room, with popovers, while they lasted. A large group left for golf. The number-one equestrienne, diminutive Mabel Fitzgerald, cute and spry as usual in her jodhpurs, this year had her daughter to ride with. Those taking the bus to Spring Mill State Park to see the replica of a pioneer village had as guide and

commentator, John Barriger, to the delight of all, especially young Woods Halley. When they returned, there were many small sacks in the bus racks filled with corn meal, ground the old-fashioned and best way at the Village Mill. Some spent the morning sitting in the lobby or on the wide veranda, reading or listening to the beautiful organ music, or took walks through the town or over the hills.

"1:00 P.M.—lunch outdoors at the Country Club with perfect steaks, perfectly cooked by the chefs and served, along with other good things, by the waiters. A joyful affair in a lovely setting, overlooking the golf course with its rolling fairways and gorgeous autumn foliage (the leaves in the Chicago area had already fallen). Father Sullivan came over from the Jesuit College at West Baden close by. Ed Wininger'24, a classmate of Phil Coleman'23, national construction engineer, who among other things has done important building in Bermuda, contributed much interesting conversation at one table. Charlie Henry'23, who had run across some Motorola friends at the hotel, the Passows and the Lundbergs, brought them to the luncheon.

"The afternoon was like the morning with the bus trip to other points of interest. All through the day, there were numerous 'times out' taken for the mineral baths, followed by massages, which long ago helped French Lick to become famous, and are still excellent.

"Cocktails were served on the train before dinner, which was in the club's own west dining room, following which it was time for this year's President, John Praetz'28, to take charge for a while, which he did with éclat. After extending greetings to all and expressing thanks to Club Director Bob Faurot, 2-44, for his work as chairman of the Fall Tonic Tour Committee, to which all added their thanks by clapping, he presented H. E. Lobdell'17, who came from Cambridge to tell about his recent European trip, just ended. As Executive Secretary of the M.I.T. Alumni Association, he visited M.I.T. clubs in Paris, Oslo, Barcelona, and other interesting cities. He also told of another trip to Mexico City.

"There followed a salute to the oldest member present, Martin Southworth'90, who came for the second time with his friend, Miss Artingstall; and greetings were extended to those from Louisville — Frank Wardwell'38, Secretary of the Louisville Club, a former Chicagoan, his wife Dorothy, and their little daughter, Dodo, the Jim Kanes'47, W. Ward, Louise Renfrow, Jack Primich and Jan Terrell, who came from the University of Indiana, John Doderich and his guests, Marjorie Jenkins, Ann Riggensstein, and James Herrin. The Barriger guests were George Minchin, retired Senior Vice-president of the Santa Fe Railroad, Colonel J. H. Edgar of the Engineering Department of the Canadian National

Railroad and Mrs. Edgar, Matthew Gaffney, superintendent of New Trier High School, Winnetka, and Mrs. Gaffney, Lloyd Michael, principal of Evanston High School, and Mrs. Michael.

"Mickie Wise presented the Gift Certificate from the members to Mrs. Barriger in appreciation of the Barriger's part in making the trip so enjoyable. This year, Bob Faurot had colored movies of his summer trip to such storybook places as Egypt, Beirut, Transjordan, Bagdad, Damascus, and old and new Jerusalem. The films, though amateur, were extremely interesting and in spots very beautiful, and it was a real treat (with the films and running commentary) to see these places through the eyes of youth. I might add that we are still a bit in the dark about how the natives in one place made felt.

"Sunday morning a bus took about 40 people from the hotel to attend Mass at the lovely little West Baden Chapel, returning just in time for them to join the others on the train for a 9:10 start for home. Coffee for those who wished it, in the diner, and later lunch and tea at their proper times. No accidents or 'incidents' had marred the trip and it was a contented group who repeated the pleasures of the trip down, on the way back.

"In addition to those already mentioned, others on the trip were: Mary Ann E. Crawford'29, who is a Chicago architect, John and Helen DuVernet'22, Jim and Grace Ferrall'17, Fred and Mardie Heuchling'47, Ray and Helen Koch'41, who had with them Carl and Nancy Mueller'41, Wendell and Gertrude McClure'26, whose guests were the Homer Bowlbys, Gerard and Betty MacGillivray '28, Frank and Corinne O'Neil'25, Karl and Maxine Otte'28. The Praetzes brought Dr. Ken Costich, a pathologist, and Mrs. Costich. Edgar and Georgiana Seifert'19 brought Joseph and Emily Hoppe, Dianne Hoppe, Edwin and Ione Harrington, John and Harriet Primich, and Gerald and Evelyn LaPine. Ben and Catherine Sherman'19 were along—also George and Catherine Tsuruoka'41, Dr. Irving and Gertrude Thrasher'27, and Ralph and Anne Bagby'16."—ROBERT S. REEBIE'43, *Secretary*, Reebie Storage and Moving Company, 2325 North Clark Street, Chicago 14, Ill.

The M.I.T. Club of Cincinnati

The M.I.T. Club of Cincinnati held its fall dinner meeting on October 28 at the University Club. Albert B. Van Rennes, 10-44, Assistant Professor of Electrical Engineering at M.I.T., provided an interesting talk on research programs of the various departments at M.I.T.

Among those who had the pleasure of hearing Professor Van Rennes were Charles H. Urban'91, Moritz Sax'96, IV, Henry D. Loring'07, I, Fred W. Morrill '07, I, Nathan Ransohoff'10, II, George H. Clark'13, II, and 22 of the recent graduates.—ALEXANDER C. BROWN'25, *Secretary*, Emery Industries, Inc., 4300 Carew Tower, Cincinnati 2, Ohio.

M.I.T. Club of Fort Worth

The M.I.T. Club of Fort Worth, Texas, met with a luncheon at Western Hills Hotel on October 29. Joseph Morgan'37,

President, appointed a committee to formulate plans for regular meetings of the Club. Present plans are for the next meeting to be during January, 1953, at which time officers for the coming year will be elected.

Sympathy was expressed on the recent death, by drowning, of our associate Joseph H. Gaylord, Jr., '27. — C. KEITH BEYETTE'33, *Secretary*, 2304 Stratford Court, Forth Worth 3, Texas.

Indiana Association of the M.I.T.

Our first meeting of the 1952-1953 season was most successful. It was Ladies Night, and 29 attended the dinner meeting at the Athenaeum in Indianapolis where the tables had been attractively decorated with Halloween favors by Mrs. Ramsey. After the dinner we had the pleasure of seeing a General Electric color sound movie entitled, "Pipé Line to the Clouds," which was presented by the Indianapolis Water Company. Newcomers to our club meeting were Dr. and Mrs. Herbert Kent'49. Since Dr. Kent is an M.D., we are wondering how many other clubs can boast of such a member.

We were sorry that Lobby was unable to share this fellowship with us. However, some of our club members enjoyed a luncheon meeting with him the previous week.—J. RAYMOND RAMSEY'17, *Secretary-Treasurer*, 511 Spruce Street, Plainfield, Ind.

The M.I.T. Club of the Lehigh Valley

The Club held its annual fall meeting at the Ingersoll-Rand plant in Phillipsburg, N.J., on October 29. Bob Loss'22, newly-elected President of our local alumni group and an engineer at Ingersoll-Rand, set up the meeting at the plant. Following dinner, the approximately 32 Alumni present were addressed by Percy J. Bentley'25, general manager of the Phillipsburg plant. Our group then toured the plant, visiting the operations where air hammers are built and assembled, the compressor division where all sizes of compressors are built, and, finally, the Cameron pump division.

The industry meeting in the fall has become an established custom with the Lehigh Valley Club and has proven to be one of the most popular features of our program. To date, we have devoted industry meetings to steel, cement, zinc, and paper. It was generally agreed by all attending the meeting at Ingersoll-Rand that this meeting was one of the best to date.

The Club is in the process of surveying its more than 150 potential alumni members. As a result of this survey, we expect to make up a directory showing each member's class, address, company affiliation, and position. The next meeting is scheduled for February, 1953.—JOHN D. BRIGGS'42, *Secretary*, 131 Wall Street, Bethlehem, Pa.

M.I.T. Club of Northern California

Twenty-one faithful Alumni gathered at New Delmonica Restaurant on Sutter Street in cosmopolitan San Francisco to

hear from Holt Ashley'48, Assistant Professor of Aeronautical Engineering at M.I.T. Although Professor Ashley's announced talk was entitled, "New Headaches for the Airplane Designer—Flutter and Aeroelasticity," 11 alumni wives were present. The ladies, as well as the men, found the subject interesting, and we were all glad to hear of the new buildings completed back in Cambridge. Professor Ashley also acquainted us with the purpose of his trip of visiting the local high schools in order to spread information to students concerning the engineering profession and about M.I.T. These visits were not necessarily made because of the fear of a falling away of enrollment at M.I.T., but in order to secure the best quality students and to spread geographic distribution of student body. He hinted of future missionary work to be done by the alumni groups, but did not go into detail. All reports on the steak dinner were very complimentary. Thanks were expressed to the management. Newcomers and visitors to this area are reminded that we have an informal lunch every Tuesday at noon at the New Delmonica, and the address is 328 Sutter Street near Stockton. Come when you can.

The Alumni present were: W. L. Wetmore'02, F. A. Olmsted'03, E. J. Riley'09, Captain A. B. Court'10, H. J. Berg'15, I. D. Beals'27, R. L. Cheney'27, H. S. Gardner'30, J. H. Arnold'31, B. O. Summers'34, H. L. Livingston'35, W. O. Thompson'35, J. K. Y. Hum'38, R. E. Keyes'40, C. E. Moffet'41, W. D. McGuigan'42, W. A. Netsch, Jr., '43, A. C. Saer'43, Norm Rupp'47, M. A. Siegel'50, and H. J. Zimmer'51. Wives present included Mesdames Summers, McGuigan, Arnold, Thompson, Keyes, Saer, Riley, Cheney, Beals, Rupp, and Moffet. This correspondent hopes the ladies will forgive him placing their names last. Their presence for the evening is considered first-rate.—RAYMOND E. KEYES'40, *Review Secretary*, 1706 Jaynes Street, Berkeley 3, Calif.

M.I.T. Club of Northern New Jersey

For its first meeting of the year, on October 28, the Club heard and saw a program on the Federal Bureau of Investigation. The meeting place, a new one for the Club and the first in the northern extremities of the state, was the Hotel Alexander Hamilton in Paterson, and the usual meeting-night weather (stormy) prevailed. Grover C. Paulsen, Jr., '40, President, presided; and the turnout of 55 heard Donald J. McNerney, special agent from the F.B.I.'s Newark, N.J., office tell of his experiences while working on criminal cases throughout the United States. Mr. McNerney showed a color movie, "A Day with the F.B.I.," which depicted the training of F.B.I. men, how the laboratory is used for the sifting of evidence, and how agents pursue the unraveling of criminal mysteries.

After the film, Mr. McNerney spoke on the history of the F.B.I., from its founding in 1908, through the assuming of its direction by J. Edgar Hoover in 1924, and up to its present expanded service where it keeps approximately 6,000

agents busy throughout the United States. He pointed out that its Identification Bureau, set up in 1924, is the country's only central agency of fingerprint files, that it now has some 120,000,000 fingerprint cards representing about 60 per cent of the population. Fingerprints of known criminals are kept in a special criminal file so that fingerprints obtained at the scene of any crime can be compared with this file with probability of quick identification. Fingerprints submitted by local authorities in this way can be identified within 48 hours. In addition to criminal detection, the Identification Bureau renders service in aiding identification for noncriminal problems such as in the identification of victims of disasters. An interesting example was that of the steamship *Noronic* disaster where fingerprints taken from 41 bodies, otherwise unidentifiable, were sent to the Identification Bureau which, after checking 24,000 cards selected from names appearing on the ship's passenger list, identified 57 per cent of the victims.

Mr. McNerney outlined duties of an F.B.I. agent and sketched the F.B.I.'s area of jurisdiction, which includes interstate crimes of kidnapping, impersonation, extortion, hijacking, hit-and-run drivers, white slavery, and draft dodgers. He related several examples of cases involving different types of crimes and showed how the F.B.I. had brought these to a successful solution.

Consensus was that this had been an extremely interesting and informative program. This venture into the Paterson area was a success, it was felt, and should be repeated. Committee reports were given by Newton S. Foster'28 for the Educational Council, Chester A. Williams, Jr.'39, for Attendance and Reception, Jack F. Andrews'33 for Publicity, and Joseph Wenick'21 for the Treasurer. The program was arranged by Stuart G. Stearns'39 of the Program Committee; and A. Donald Green'26, co-chairman of House Committee, handled hotel arrangements. The formal meeting was followed by an informal social hour with refreshments of sandwiches, beer, and cider.

The next club meeting has been set tentatively for January 29 at the Hotel Suburban, East Orange.

In his report for the Attendance and Reception Committee, Chet Williams'39 announced that the following were participating in the work of this committee: Sumner Hayward'21, Russell Lowe'16, Emerson Callahan'48, Robert Einhorn, Russell Westerhoff'27, Bennett Sharp, Jr.'36, Donald Green'26, Joseph Wenick'21, Lawrence Trowbridge'22, Peter Baker'50, Gordon Holbrook'10, George Webb'36, Peter Smolka'41, Donald Spitzli'27, Newton Foster'28.—**RUSSELL P. WESTERHOFF'27, Secretary**, 823 East 23rd Street, Paterson, N.J. **JACK F. ANDREWS'33, Assistant Secretary**, 209 Tuttle Parkway, Westfield, N.J.

M.I.T. Club of Rochester

The annual meeting and steak roast was held last September 27 at Mendon Ponds County Park. After the odd classes team had routed the even classes in de-

feat in softball, all gathered around the charcoal grill to pick off a sizzling morsel. The steaks and fixin's had been marshaled together by the picnic committee coached by Charlie Payne'33 and consisting of Win Brown'34, Bill Halbleib'48, Bill Hosley'48, Jim Littwitz'42, and Jim Rial'47.

As the cool autumn night closed in, the Club, putting the polishing touches on dessert and coffee, lit the Coleman lanterns and settled down to the business of the evening. The first item of business was the adoption of a new constitution. Years of progressively greater deviations from the provisions of the original charter had caused sleepless nights in the upper echelons of club government, regarding the legality of operations. A unanimous ratification rectified this abhorrent situation. To uphold the new constitution, the officers elected at the meeting for the 1952-1953 season were as follows: Alfred V. Dasburg'36, President; Clarence L. A. Wynd'27, President-Elect; Dwight Vandevate'22, Vice-president; Frederick J. Kolb'38, Secretary; William N. Hosley'48, Assistant Secretary; William F. Halbleib'48, Treasurer; and Alfred E. Castle'40, V. Nelson Hansford'37, and David L. Babcock'33, members-at-large of the Executive Committee.

Accompanied by various members of the Club's Educational Council, William V. A. Clark'42, Assistant Professor of Industrial Management, visited seven of Rochester's high schools in October. Meeting with the Club on October 23, Professor Clark described the operations of the new School of Industrial Management. His discussion of this addition to the Institute was of great interest to the members who attended, for they all had been wondering about what would be going on in that big building on the Drive. The information that the new school is intended to be the best of its kind was especially gratifying to the Course XV men who looked forward to an easier time of defending themselves against the men up the river.

The following members attended the annual meeting: H. E. Akerly'10, O. L. Angevine'36, J. C. Aronson'22, R. G. Bowie'38, Winton Brown'34, J. S. Bruce'39, P. J. Byrne'50, J. N. Cooper'30, H. R. Couch'20, C. K. Crofton'22, C. A. Duboc'43, E. A. Edwards'37, H. E. Essley'36, G. E. Francis'28, H. S. Gleason'43, Murray Goddard'48, Reynold Grammer'47, W. F. Halbleib'48, W. N. Hosley'48, F. J. Kolb'38, Andrew Langdon'22, H. H. Leary'23, J. K. Littwitz'42, E. M. Low'29, Arnold Mackintosh, 2-44, E. H. Miller'23, V. J. Moyes'24, A. J. Murrer'48, William O'Neill'43, C. C. Park'50, C. F. Payne'33, R. W. Peters'30, W. A. Pitbladdo'31, D. W. Ramsey'50, J. H. Rial'47, A. B. Sherman'06, D. E. Suter'38, W. F. Swanton'33, F. B. Thorne'27, S. C. Wells'30, P. B. Wesson'98, Vernon Whitman'22, R. M. Wilson'30.

The following members gathered to meet with Professor Clark: H. E. Akerly'10, Winton Brown'34, F. M. Buresh'34, P. J. Byrne'50, Margaret Coleman'50, H. R. Couch'20, C. A. Duboc'43, W. F. Halbleib'48, W. N. Hosley'48, F. J. Kolb'38, D. J. Kridel'40, H. H. Leary'23, C. C.

Park'50, D. W. Ramsey'50, A. B. Sherman'06, H. M. Shirey'22, W. E. Summerhays'41, Dwight Vandevate'22, W. H. Vogt'19, Vernon Whitman'22, R. M. Wilson'30.

The Club's Executive Committee has been hard at work developing a program for the months ahead. As this is being written, we are looking forward to the December meeting at which Richard Fowler'37 will be our speaker. Dick has recently received widespread recognition for his medical research in the treatment of multiple sclerosis. At Christmastime, we will have our annual luncheon for students from the Rochester area currently attending the Institute.—**FREDERICK J. KOLB, JR.'38, Secretary**, 211 Oakridge Drive, Rochester, N.Y., **WILLIAM N. HOSLEY'48, Assistant Secretary**, 234 Croydon Road, Rochester, N.Y.

Southeastern M.I.T. Association

On November 12, the M.I.T. Alumni in Alabama honored James R. Killian, Jr., '26, with a dinner at the Birmingham Country Club. His talk following the dinner was quite comprehensive of developments completed and under way now at the Institute, and interested each of those present.

The dinner list, in addition to Dr. Killian, included: Merrill Pratt'16, President of the Association, Harold Abrams'48, George B. Bradshaw'03, Robert Coleman'40, James G. Creveling'25, James F. Crist'24, James W. Davidson'52, Douglas F. Elliott'24, George J. Fertig'24, William H. Hoar'26, Prescott V. Kelly'13, Laurence D. Luey'29, Edwin B. Miller, Jr.'50, John W. Powers, Jr.'33, Joseph G. Reid'08, Robert C. Stobert'12, Raymond E. Strickland, Jr.'38, Oscar G. Thurlow'04, Theodore F. Randolph, 10-44, Arthur G. Wakeman'21, Fernand C. Weiss'13, and John H. Wood'24.

Preceding Dr. Killian's address, a few business matters of the Association were accomplished, including the election of new officers. Charles L. Gaines, Jr.'25, was chosen as the new president, and Laurence D. Luey'29 was selected as the new secretary of the Association.

An expression of appreciation was given to the retiring officers, Merrill Pratt'16 and Amasa G. Smith'29.—**AMASA G. SMITH'29, Secretary**, Chicago Bridge and Iron Company, Post Office Box 277, Birmingham 9, Ala.

M.I.T. Club of Southern California

The M.I.T. Club of Southern California was host to Holt Ashley'48, XVI, Assistant Professor of Aeronautical Engineering, upon his recent tour of the southland. A dinner at the Carolina Pines Restaurant on October 22 was the occasion for discussions concerning the activities of our organization in conjunction with local high school counselors toward the attraction of high-caliber students to M.I.T. In a lively question-and-answer period after our chicken dinner, Professor Ashley pointed out the opportunities of the Alumni in widening the base of schools from which M.I.T. men could be drawn.

The following Alumni were present: Hiram E. Beebe'10, Bernard S. Coleman '19, R. S. Hereford'24, William H. MacCallum'24, F. W. Grantham'25, Ralph B. Atkinson'29, Page Golsan, Jr.'34, Oscar Hakala'35, Andrew F. Kay'40, James S. Cullison'41, Jon Edwards, 2-44, Leon Levine'49, Stanley Korylak'50, Kenneth Rogers'49. — PHILIP A. HERRICK'24, *Secretary*, 737 Terminal Street, Los Angeles 21, Calif. JAMES S. CULLISON'41, *Assistant Secretary*, 6567 West 84th Place, Los Angeles 45, Calif. HIRAM E. BEEBE'10, *Review Correspondent*, 1847 North Wilcox Avenue, Hollywood 28, Calif.

M.I.T. Club of the University of Illinois

Members of long standing in these parts were delighted to find that, since World War II, the list of M.I.T. Alumni at Illinois has grown like Topsy. This pleasant state of affairs was revealed at an October dinner meeting, which we were happy to have coincide with a visit to the campus by H. E. Lobdell'17. For many long years the local membership could be counted on the fingers of one hand, so it was a treat to find 14 present for the recent gathering at the Illini Union: E. J. Corey '48, V, David B. Kellom '49, V, Harry W. Johnson, Jr.'51, V, A. Richard Williams'37, IV, Y. G. Hendrickson'51, V, John K. Williams'50, V, Richard E. Lyle'52, V, David M. Lish'51, VIII, John Fox'51, VIII, Phillip Horrigan '48, V, A. C. Willard'04, X, Fred Turner (Dean of Students at the University), and Alan K. Laing'26, IV. Professors Huntington'23 and Babbitt'11, usually old stand-by's, expressed regret for being out of town at the time.

Mr. Lobdell did a thorough job of filling us in about recent M.I.T. events, both at Cambridge and abroad. After a glowing account of the M.I.T. activities in Mexico, many of us who will be winter-bound in February are itching to be present for the 1953 affair. Echoes of the recent engineering centennial in Chicago are still reverberating, especially of the large part played by the Chicago M.I.T. Club. Unfortunately, no Illinois members were present to make a first-hand report, in spite of glowing invitations from our neighbors to the north.

Your Secretary believes it has not been reported that the former secretary of the Illinois Club, Alan Laing, returned last year from a year's sabbatical at Harvard and abroad where he did some exhaustive research on Beauvais Cathedral.— A. RICHARD WILLIAMS'37, *Secretary*, Department of Architecture, University of Illinois, Urbana, Ill.

CLASS NOTES

• 1883 •

The Secretary regrets to report the death of George Albert Smith. From a recent clipping in the Boston *Herald*, the following information is given: "George Albert Smith, 91, died at his home, 41 Academy Street, Arlington, [Mass.,] in the same

house in which he was born when Arlington was known as West Cambridge.

"A graduate of . . . Technology in 1883, he was the 12th oldest living graduate. Three years later in 1886 he and a boyhood friend, Thomas Strahan, formed a partnership as wallpaper manufacturers in Chelsea under the name of Thomas Strahan Company.

"He was the son of the late Rev. Samuel Abbot Smith, former minister of the First Parish (Unitarian) Church, Arlington, who died of typhoid fever contracted while working with soldiers during the Civil War.

"Mr. Smith, a member of the same church, was parish clerk for 26 years. He had long been active in the Arlington Historical Society and had served on the Arlington town finance committee of 21.

"He leaves two sons, Samuel Smith of Weston, president of the Thomas Strahan Company, Chelsea, and Charles Smith of Cambridge; a daughter, Miss Elizabeth Abbot Smith; six grandchildren and two great grand-sons."—HORACE B. GALE, *Acting Secretary*, 10 Highland Street, Natick, Mass.

• 1886 •

The "Acting Treasurer" of '86 has recently requested the Secretary to publish a call for funds, saying that unless contributions are received soon, the Class will be unable to send a representative to the monthly Council meetings. Class secretaries are expected to attend these meetings as often as possible, and the expense of attendance is supposed to be borne by the class membership as a whole and not by two or three.

The Treasurer's report to the Class Secretary, and by him transmitted to the class membership through the medium of *The Review*, for the calendar year (1952) to date is as follows: balance on hand January 1, 1952—\$9.87. Contributions from three members (Campbell, Mackintosh, and the Secretary), \$20.00. Sale of postage stamp, \$0.03 (!). Total, \$29.90. Expended: postage, \$0.36; two Council meetings, May and October, \$22.18. Balance on hand November 11, \$7.36. Respectfully submitted, A. T. Chase, Treasurer. Approved, Arthur T. Chase, Secretary '86. Audited: Arthur Taft Chase, C.P.A., Auditor for '86. (Details submitted on request.) Inasmuch as it costs \$10.00 or more for the Secretary to attend a meeting and as there will probably be nine meetings in the 1952-53 season, the membership can easily calculate the amount needed to have an '86 class representative at the monthly meetings. This report will not reach the membership until late in January at which time, unless something unexpected happens, the Treasurer will be in the "red." After reading the above, let your conscience be your guide, and do not expect the three "worthy" men to shoulder the expense for the coming year.

Perhaps a short account of the doings of the Secretary during the past months will fill the void caused by the lack of other information. In the July issue he reported that he had fallen in his bathtub and was recovering from the effects thereof. Not being satisfied with the ce-

lebrity achieved by that adventure, he went further afield in June and fell in a cranberry bog on the Cape while searching for specimens for his microscope, to which he is more or less addicted. This time the results were more serious. After his good wife had pulled him out and taken him to the doctor, it was found that he had fractured his left arm and had to have it strapped up and tied to his body in a sling. A period of great discomfort followed until the fracture was reduced, the strapping removed, and exercises begun and systematically continued until at this writing (in November) he has largely reacquired the use of the arm, although it is still difficult to get into a coat, unassisted.

In October, together with Mrs. Chase and a friend, I made an auto trip into Virginia, Mrs. C. doing most of the driving as she lacked full confidence in the reliability of my arm in an emergency. We visited relatives and carried school supplies for some colored primary schools sponsored by women's alliances. We visited the Natural Bridge and inspected what we were told were George Washington's initials carved high under the arch. The evening illumination and impressive religious service with music and recitations, portraying the seven days of the Creation, were given with dignity and received by the large audience with silence and solemnity. The day had been clear and warm, the coolness of the evening, with the great arch curving overhead, made a picture long to be remembered. On our way north we stopped also at the Luray Caverns. Here, with a group of some 20 others, accompanied by two guides, we descended the long flight of steps and explored the winding paths and great hallways of this most astounding exhibit of the effect of water acting upon limestone for untold ages. Another feature of the trip was a visit to the Marine Base at Quantico. Here a lieutenant colonel nephew of Mrs. Chase demonstrated the visual and audio aids employed by the officers in the Junior School in teaching our Marines to become more efficient. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1890 •

Dr. William Goodwin Curtis was "senior physician guest" at the ceremonies dedicating the Franklin County Public Hospital's \$1,500,000 expansion at Greenfield, Mass., on October 22, 1952. The Greenfield *Recorder-Gazette* recounts his early history and states that "he had passed the competitive examination for the U.S. Naval Academy at the time he entered Tech," where he put in four years in biology, and so on. Our records do not cover the following foundations for his career: two years with the Boston Water Works, four at the Bellevue Hospital Medical School, a year as intern, and a year substituting for a county physician at Bernardston, Mass. It was at this time that he was appointed to the medical staff of the Franklin County Hospital. From Bernardston, he went to Quincy and started his practice which continued there for over 50 years until he "retired" to a still active practice at Brewster, Mass.

Frank Greenlaw is still active at Newport, R.I., where he is a member of a commission watching an important sewage control project. He says this is a couple of miles walking each day which keeps him in good condition. A visit to Franklin Knight found him delightfully located with one of his sons at Lenox, Mass., and in good health except for a slight head cold. He stated that he was to conduct an Episcopalian service the following Sunday morning at 6:00 A.M.

Bertram Lenfest has been making trips annually to the Pacific Coast for many years, the greater portion of his transportation being by bus. Last year he broke his record by traveling 500 miles by plane, and this year he reports that he did 4,800 miles by air and only 1,000 by bus. We congratulate Bertram on being back in good condition after spending about a third of his time in the hospital two years ago. William P. Flint is back at St. Petersburg, Fla., but this time his address is changed to 4535 First Avenue, North.—GEORGE A. PACKARD, *Secretary*, 53 State Street, Boston 9, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle Street, Belmont 78, Mass.

• 1892 •

The Secretary recently received notice of the death of Richard Davenport Chase on October 18 at his home, Purchase Street, New Bedford, after a long illness. A member of '92 during our four years at the Institute, he graduated with an S.B. in Sanitary Engineering and his whole career was spent in that and closely allied fields. He specialized in the design and construction of filter plants and water supply work which took him away from New Bedford for long periods. The Secretary is indebted to the *Standard Times*, New Bedford, for the following account of his career:

"Chase was born in the Davenport family homestead at 607 Purchase Street, which had been in his family 94 years. He was a life member of the American Society of Civil Engineers and of the New England Waterworks Association. Among the many projects he directed in his career was the installation of the water supply at Fort Dix in World War I. He made studies for filters for part of the water supply of Boston and represented the consulting engineer in the construction of Cobble Mountain Dam for the city of Springfield. Other commissions were executed by him at Washington, Pittsburgh, St. Louis, Albany and the Calaveras and San Pablo Dams of San Francisco.

"Mr. Chase was a former member of the Wamsutta Club and the Brooks Club, and a member of the New Bedford Tech Club. Survivors are his widow, Mrs. Mary (Manson) Chase, and two daughters, Miss Rhoda Davenport Chase of this city and Mrs. William H. Cameron, Jr. of Middletown, Del. His parents were Captain Ariel and Annie Davenport Chase." At the time of the reunion last June, Chase sent his regrets at being unable to be with us because of ill health.

The Secretary has little further to report except that Channing Wells, who is on his way to his winter home in Palm Springs, states that he had lunch with

Sam Weis in Chicago and found him quite well. Weis was very much disappointed that his illness in New York, just before our reunion, prevented him from being with us.

Wells hopes that by another spring some of our classmates may be able to visit "Old Sturbridge" where he makes his summer home and is greatly interested in the restoration of the old town. Carlson reports that he hopes to be on his way to Florida again the latter part of next month to spend another winter.—CHARLES E. FULLER, *Secretary*, Box 144, Wellesley Hills, Mass.

• 1895 •

Your Secretary had a birthday last September 1, arriving at the age of 80. This started him thinking of some of the other lads who were born in the year 1872, and he checked the class record with the following result: Farquhar, Hunt, and Kimball born in February, 1872; Charles W. Berry in May; Dorville Libby, Jr., in June; Charles H. Clark and John Williamson Cooke in July; Eveleth, Bliss, and George L. Bixby in August; John Dyer, Jr., Harris, Maverick, Sheafe, and Yoder in September; Lat Ballou in October; Ed Tucker and Richards in November; and Luther Conant and Gerard Swope in December. Of the 20 men born in 1872, 10 were born prior to your Secretary, and nine after he "came to light." Those mates born prior to 1872 are few, and are as follows: in 1871, Charles P. Cooke, Winthrop D. Parker, and William E. Swift; in 1870, Arthur F. Nesbit; in 1868, Perley F. Gilbert and George W. Priest; in 1866, Elmer L. Wengren. All remaining living members were born after 1872. Some day we will report the ages of the younger group. On November 1, we received a depressing letter from Mrs. Edwin C. Alden, who reported that Edwin had a complete collapse, both mentally and physically. We hope to have some more encouraging news later. They are now located in Southern Pines, N.C. Your Secretary wishes all of you the best you can get during the new year 1953, and hopes you will be happy and contented for some time to come.—LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

We have much to be thankful for as we start a new program, the result of a sweeping "change" election. We should feel confidence in the election of General Eisenhower. His experience, in and out of military channels, makes it seem possible for a new and successful start toward sane democracy.

Our class news will be limited in this issue, but our selection of news gives outstanding evidence of the quality of our classmates' accomplishments.

From the Washington, D.C., *Sunday Star*, November 9, we find the following information about our classmate William H. McAlpine: "The top civilian engineer in the office of the Chief of Army Engineers here, William H. McAlpine, today was enjoying retirement after 50 years' service. Lt. Gen. Lewis A. Pick, chief of engineers, yesterday announced Mr. McAlpine's retirement. But Mr. McAlpine,

international authority on design and construction of masonry and earth structures for navigation, flood control and power, will be available to the Army Engineers for consultation.

"Gen. Pick said in a message to Mr. McAlpine: 'I know of no employee in the corps who has had a more distinguished career than you, nor of anyone who has made a greater contribution to our civil works program.' Mr. McAlpine has been in the Office of the Chief of Engineers here since 1934. He resides with Mrs. McAlpine at the Clifton Terrace Apartments, 1300 Clifton Street, N.W.

"Gen. Pick said that Mr. McAlpine personally participated in the approval of the location and design of nearly every major flood control structure in the country. He paid tribute to Mr. McAlpine's sound judgment that resulted in safe and economical construction."

With deep regret we report the death of Welles M. Partridge of the Class of '96. From a clipping dated November 2, Boston *Sunday Herald*, comes the following information: "Private services will be held . . . at Bennington, Vt., for the Rev. Welles Mortimer Partridge, retired Episcopal minister who invented a man-carrying kite and pioneered in the use of illuminating gas for home heating. He died . . . in Brookline. The churchman, who before the turn of the century abandoned his studies at . . . Technology to enter the ministry, developed during World War I a man-lifting kite which he hoped would be used to spot enemy submarines. The end of the war cut short his work on the project.

"In 1923, 'the theological engineer' demonstrated at his South Braintree home a thermostatically controlled system of using illuminating gas to heat water that circulated in copper coils. After his theological studies shortly before the turn of the century . . . Rev. Partridge went to the Klondike during the gold rush as a missionary. In 1924, as rector of St. Ann's Episcopal Church, Dorchester, he upheld the fundamentalist faction in a controversy with the 'modernists.' He resigned from the Dorchester church in 1930, and following a rest he travelled by car for a preaching mission in the Far West."

A report on the class funds: The balance for the Benevolent Fund is \$1,750; balance for the regular fund, \$176.19.

We would request added biographical sketches from the *modest* cross section of our Class.—JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge, Mass.

• 1897 •

All members of the Class of '97 have doubtless received the letter from Dr. Kilian under date of November 15, advising that they, as members of a class 50 or more years graduated, will receive complimentary issues of *The Technology Review* for the coming magazine year. This is good news indeed, and it is your Secretary's desire to make the class news items during this time as numerous and interesting as possible. To do this he must have the co-operation of the class members.

Recall how very enjoyable were the extracts from a number of the letters from members of the Class that were read at the luncheon held in June at the Algonquin Club in Boston and were published later in *The Review*. Realize how interesting such extracts must be to those of the Class who are far removed from Boston and can never get to our reunions. Many of the Class are in varying degrees of ill health and their enjoyment of such letters would be very great. So, therefore, your Secretary begs, yes begs is the word, the fellows to send letters to him for reproduction in these class news columns.

We have learned that Arthur L. Jennings is slowly recovering from a serious operation. We suggest that some of the fellows write to him to cheer him up and speed his recovery. His address is 1212 Kennedy Street, N.W., Washington 11, D.C.

The new address of Commander Frederick A. Hunnewell is Cosmos Club, 22nd Street and Massachusetts Avenue., N.W., Washington, D.C.

James W. Smith and Mrs. Smith are spending the winter in Florida. Their address there is Indian Rocks Beach, R.F.D. 1, Largo, Fla. — JOHN A. COLLINS, JR., Secretary, 20 Quincy Street, Lawrence, Mass.

• 1898 •

Your Secretary is writing these notes the week before Thanksgiving, '52. Members of the Class and friends have made him thankful, sad, and glad. Thankful because they have sent to him an abundance of material for interesting class notes; sad because so much pertains to those who have passed within the Unseen Temple; and glad on two counts. First, that the deeds and accomplishments of our deceased classmates can be included as a fitting record and tribute in the class notes; and secondly, because so much of the material is about those who are still living and are actively engaged in business, literature, science, technology, and the like.

Margaret K. Gardner has been for years accounted a member of our Class. Through the courtesy of *The Technology Review*, we have received the following gracious tribute, which appeared in the publication, *I.A.S. News* (i.e., Institute of the Aeronautical Sciences News):

"Margaret Kettle Gardner died on March 29 at the Harkness Pavilion, Columbia-Presbyterian Hospital, New York, after a prolonged illness. Mrs. Gardner will be long remembered by all of us who have been associated with the Institute of the Aeronautical Sciences, for it was through her invaluable assistance during the Institute's early days that her husband, Major Lester D. Gardner, I.A.S. Founder, Benefactor, and Fellow, was able to build the organization of which we are all so proud. Mrs. Gardner converted her home into the Institute's headquarters during the first year of its existence. It was she who was responsible for the successful execution of many of the myriad details associated with the founding of any organization. Some of the duties she performed so capably included the issuing of invitations to the Founder

Members, the subsequent listing of all I.A.S. members, and the maintaining of an accurate set of financial books and statements. For many years after the Institute was established in Rockefeller Center, she continued to give her services gratuitously to the affairs of the Institute. Through Major Gardner, Mrs. Gardner became vitally interested in aviation. She had her initial contact with the industry in 1915, when she first entertained Orville Wright who became her life-long friend. From that time until her death, she counted among her intimate friends most of the prominent figures in the aeronautical profession. Beginning in 1926, Major and Mrs. Gardner embarked upon several air tours of Europe, meeting along the way aeronautical leaders of England, France, Germany, and Italy. As a result of these tours, the Institute became international in scope and listed among its Founder Members representatives of both foreign and domestic aeronautical activities. Mrs. Gardner was born in Angelica, N.Y., on November 18, 1882. For 10 years prior to her marriage in 1913 to Major Gardner, she taught in the New York public schools. She was a member of the English Speaking Union and of the American Legion Auxiliary. A memorial service was conducted for Mrs. Gardner in New York on March 31 by Gill Robb Wilson, who at one time served as a Presbyterian clergyman in a Trenton, N.J., church. Three days later, on April 3, she was buried at Arlington National Cemetery in a site adjacent to the graves of four of America's prominent generals — John J. Pershing, Henry H. Arnold, Muir Fairchild, and Walton H. Walker."

There is a photo-illustration under which is the legend: "Margaret Kettle Gardner, as she appeared at the Second Anglo-American Conference in May, 1949, with Sir John Buchanan (left), then President of the Royal Aeronautical Society, and Major Lester D. Gardner, Founder of the Institute of the Aeronautical Sciences." In the photo, Margaret and Lester both look very robust and smiling. The date of the photo, members of '98 will note, was a year after the celebrated Golden Anniversary.

We have more information concerning George Treat. The Alumni Fund Office has kindly sent us the following clipping from the *Quincy Ledger* of October 15, 1952: "George W. Treat Leaves Estate Of \$1,000,000. Auburn, Me., Oct. 15 — (INS) — The will of George W. Treat, head of the Boston investment banking firm of E. H. Rollins and Sons, was filed today for probate and disclosed an estate of \$1,000,000. Treat, who maintained homes in Braintree, Mass. and his native Livermore Falls, Me., died at Massachusetts Memorial Hospital in Boston, last August 25. . . . After the death of . . . beneficiaries, the residue of the estate is to be shared by Bates, Bowdoin and Colby Colleges and the University of Maine, Hebron Academy and Massachusetts Institute of Technology."

This mentioning of M.I.T. in wills is getting to be a habit. Other members of '98, who are deceased, have mentioned M.I.T. in their wills; and some, who are now living, have told us that they have so

done or are considering it. If you also wish '98 to get the credit of these benefactions, and do not know how exactly to phrase it legally, write to our President, Daniel W. Edgerly, to the Secretary, or to the Treasurer of M.I.T., Joseph J. Snyder.

We are indebted to Leverett H. Cutten '07 for the following additional information concerning George Treat: "In the November number of *Technology Review* you ask for information about my friend, George Treat. Mrs. Treat and I are members of the Class of 1904, Bates College. I am enclosing the clippings that she sent to me. George always came with Elsie to our '04 reunions so we made him an honorary member of our class with the degree, H.L., *Homo Laetissimus* (A Jolly Good Fellow). All who knew him have lost a friend." The enclosed clipping from *Livermore Falls newspaper*, August 28, 1952, covers essentially the same ground as narrated in the December '98 class notes. We thank friend Cutten for his kind letter.

We have received considerable material concerning the passing of two other classmates: Robert S. DeGolyer and Mrs. Julia Ellsworth Blau. In pursuance of our policy to endeavor to keep an even balance between necrology and present activities of members of the Class, we will reserve this material for future issues of *The Review* and pass on to present-day accomplishments.

Our distinguished classmates, Roger W. Babson and C.-E. A. Winslow, continue to figure prominently in the news. Roger was one of the speakers at the 39th Annual Babson National Business Conference, held at Wellesley Hills, November 7 and 8. Other speakers included Leonard Spangenberg, economist, H. Clyde Baldwin, financial analyst, and Edward B. Hinkle, Dr. Hinkle, members of '98 will remember, spoke to us at the Golden Anniversary in the course of that unforgettable day at Babson Park.

From the Alumni Office we have received the following clipping, advertising another book by Professor Charles-Edward A. Winslow: "The thrilling story of science's victory over epidemic disease *Man And Epidemics* by C.-E. A. Winslow. The conquest of epidemic diseases is one of the outstanding achievements of man in the past century. In the United States the once-dreaded terror of uncontrolled outbreaks of such diseases as cholera, typhoid fever, bubonic plague, yellow fever, and malaria is a thing of the past. This book presents for the general reader the fascinating account of the modern methods of control that make it possible for the average citizen to draw pure water from the faucet, enjoy a sanitary milk supply, and eat food without fear of infection. It also provides a historical and philosophical background for the professional worker in the field of public health. Dr. Winslow, professor emeritus of public health at Yale, is special consultant to the World Health Organization. Illustrated, \$4.00. Order from your bookstore, Princeton University Press."

George Cottle, who, among many activities, is first and foremost treasurer of the Crofoot Gear Corporation of South

Easton, Mass., was pleasantly surprised in August on the occasion of his 75th birthday by the employees of the company, who presented him a silver platter with the inscription: "George T. Cottle from all the employees of the Crofoot Gear Corp. with warm affection and esteem on his seventy-fifth birthday." George was greatly touched and responded to the presentation with appropriate remarks.

Such pleasant occasions are catching; for on the occasion of the Secretary's 75th birthday, his associates and the employees of the W. C. Durfee Company, Inc., of Boston, Mass., also surprised him, and, after a dinner at the Red Lion Inn at Cohasset, presented him with a reading lamp, which is now doing duty at his home in Marblehead, not far from the desk where he is now penning these notes.

Your Secretary attended the 31st National Convention of the American Association of Textile Chemists and Colorists, held on November 6, 7, and 8, 1952, at the Hotel Statler, Boston. There were 1,730 registered, besides other visitors, several from abroad; 150 exhibitors, comprising commercial exhibits and exhibits portraying the research work of the association; and many notable papers were presented at the various meetings. Medals and prizes were awarded, and there were numerous excursions, arranged principally for the ladies. A unique feature, Friday evening, was a Boston Pop Concert held in the Grand Ballroom of the Statler and rendered by the Boston Symphony Pops Orchestra under the leadership of Roland Tapley, conductor. The Annual Banquet was attended by 1,000, with 31 prominent mill executives and their wives as guests. The guest speaker was William H. Ruffin, President and Treasurer, Erwin Mills, Inc., Durham, N.C., and President, the American Association of Manufacturers. A roster of those assisting in the convention reads like a page from the M.I.T. Alumni Register: Thus, A. E. Sampson '15 arranged for the Pop Concert and J. N. Dalton '15 selected the pieces played; A. W. Mack '15 had charge of the printing; John M. Gould '37, of the registration; E. S. Chapin '98, of the reception; K. H. Barnard '12, E. R. Kaswell '39, and R. B. Finch '41, of the technical programs; and F. J. O'Neil '39 of the Intersectional Contest. Professor E. R. Schwarz, M.I.T. '21, presided at a technical session and presented a paper. W. J. Hamburger '21 acted as toastmaster at the Olney Award luncheon and on the occasion of the Annual Banquet, and also presented a paper. We noted, with interest, embodied in the remarks of the program concerning a paper by Dr. L. P. Herrington, Department of Public Health, Yale University, the following: "With C. E. A. Winslow, he is co-author of a recent book, *Temperature and Human Life*, which reports the experimental basis of his views on bioclimatic factors and the effects of clothing and habitation in reducing climatic stress." So you see, Charlie Winslow, we are finding out about your activities.

We really think there is a lot to the saying, "An ounce of taffy is worth a pound of epitaphy," and while we are glad to find out about the accomplishments of

classmates after they have passed on, through newspaper write-ups and the like, would it not perhaps be better, if, before then, you did it yourself and sent similar items about past or present positions and accomplishments for inclusion in the class notes? Think it over! Remember the 55th. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. ELLIOTT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington, Mass.

• 1899 •

Notices have been received from the Alumni Secretary of the passing of two more of our classmates: Reuben S. Henderson, I, of Santa Barbara, Calif., died July 5, 1952. A letter to his address given in the register of graduates has elicited no reply. Carl L. Morgan of 15 Wright Street, Westport, Conn., died on October 15, 1952. No further information is available at this writing. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

• 1900 •

Clarence C. Brown, a graduate from Course VI, died September 16, 1952. Immediately after graduation, he entered the employ of the Bell Telephone Company. He was located in Boston from 1900 to 1903, in Philadelphia from 1903 to 1915, in Pittsburgh from 1915 to 1918, and again in Philadelphia from 1918 until his retirement in 1942. Since that time he remained in Philadelphia with his home in Germantown. He is survived by a son, Roger, and a daughter, Mrs. John J. Wood, Jr., both of Philadelphia.

The Boston *Herald* reports the death, on November 10, of Herbert H. Albee of Wollaston. He entered M.I.T. with us and remained one year. He then left the Institute to join his father in the firm of Amos D. Albee Son and Company, certified public accountants. He remained with this firm until his retirement last August. He leaves his wife, Lillian Bates Albee; two daughters, Mrs. Ian M. Rusk of North Smithfield, R.I., and Virginia Albee of Cambridge; a son, Philip H. Albee of El Cajon, Calif.; and four grandchildren. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

I have not a great deal to offer in the way of news this month, as the interest of the Class seems to subside since we have passed the 50th reunion. I hope when you reply to the class letter in February that you will furnish me with more material for the notes.

Carl Johnson has been very good about supplying material, and I will quote from his class letter reply of last spring: "Am still operating the Instrument Flight Institute. Retired from active service and vice-presidency of the Johnson Service Company of Milwaukee, Wis., some years ago but am still a director. The company now has 58 offices throughout the United States and Canada and manufactures, besides automatic temperature regulators,

radar, meteorological instruments, and other technical devices for the Federal Government. However, since the close of World War I, I have been most interested in aviation as flying instructor and pilot. Together with the Paul F. Johnson Foundation (brother, deceased), I have recently completed the publication of Captain John Johnson of Roxbury, Mass., genealogy. Captain John Johnson came to this country from England with Governor Winthrop's fleet in 1630. He was the first clerk of the Ancient and Honorable Artillery founded in 1638 and still having the entire top floor of Faneuil Hall in Boston. His oldest son, Isaak, was captain of the above artillery and was the first American officer killed in the fight with the Indians at Narragansett Swamp, December 19, 1675, at a place called Four Corners, Sakonnet River, Rhode Island. He was captain of the Roxbury Company at the time. My brother, who graduated from M.I.T. in 1898, died six years ago. He left no progeny to carry on the line. I have a son and a grandson." In a later letter Carl says that his grandson may enter M.I.T. about the time of our 55th reunion, so Carl will be with us then. His summer was spent first in sailing at Newport Harbor, Calif., and then at his home at Lake Tahoe.

A Boston paper reports that our classmate W. T. Aldrich has been re-elected chairman of the Board of Directors of the New England Conservatory of Music.

A letter just received from Phil Moore encloses the following clipping from the New York *Times*: Alexander H. B. Jeffords, nationally known engineer and former vice president of the Trundle Engineering Co., died in Cleveland, Ohio on November 10 at the age of 73. A graduate of M.I.T. ('01), he served in executive capacities with the Consolidated Telephone Co. of Pennsylvania, E. I. du Pont de Nemours and Co., Standard Aircraft Co. and Sherman Corporation before joining Trundle. He remained with Trundle from 1924 to 1947 when he opened his own office as an industrial engineer. Mr. Jeffords had supervised management planning for many large industrial concerns including Remington-Rand and Eastman Kodak. A son survives."

Phil also wrote that Arthur Hayden has had an uncomfortable summer climaxed by an operation. He is much better now.

As I shall send out the class letter in February, there will be no 1901 notes in the February Review. — THEODORE H. TAFT, *Secretary*, East Jaffrey, N.H. WILFORD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1903 •

Have received a long letter from Gould, VI, who spent a part of the summer in southern California. He looked up George Clapp in San Pedro, he having retired from the San Diego Port Authority after a long service there. He now does survey work on the side, is in good health, and is only sorry that he is so far from alumni circles. Gould also called on Fred Crosby, VI, who lived in Hermosa Beach, but who was about to move into a new house being built for him in Torrance, a part called Hollywood Riviera. Both

Fred and Mrs. Crosby seemed well and happily situated. Fred maintains business connections with Morgan Construction Company, but, while he is fairly busy, takes things rather easy.

We are indebted to the Rochester, N.Y., *Democrat and Chronicle* for the following: "William P. Cross, president and treasurer of the Cross Pattern Shoe Company Inc. from 1904 to 1950, and active throughout his life in civic, humanitarian and Baptist church affairs, died in Highland Hospital yesterday (Oct. 8, 1952), after an illness of several weeks. He was 73. Born in Beverly, Mass., Mr. Cross came to Rochester with his family in 1892, and soon afterward his father, D. E. Cross, founded the shoe manufacturing supplies firm. Following his father's death, Mr. Cross became president of the company. Only Tuesday he was saluted as "Citizen of the Day" by a program on Radio Station WHEC. The program honored him for his work during the last two years as a Red Cross Gray Man at the Canandaigua Veterans Hospital. From his college days almost right up to the time of his death, Mr. Cross was active in Baptist church activities, almost too numerous to mention. At various times he was Sunday School teacher, and deacon, trustee and superintendent of the Sunday School program at the Park Avenue Baptist Church. He served as leader of the Sunday School program at the Baptist Temple, of which he was treasurer and also a trustee. Besides being a trustee of the Baptist Emmanuel Church, he was also vice president of the Baptist Union of Monroe County. Last winter while visiting his daughter in Corpus Christi, Texas, Mr. Cross volunteered his services as a Red Cross Gray Man to the Corpus Christi Naval Station hospital. His offer, which dismayed many because of his age, was readily accepted and he became the first Gray Man ever to work at the Naval hospital. Mr. Cross was graduated in 1901 with Phi Beta Kappa honors from the University of Rochester. He received a bachelor's degree from the U.R. and later a bachelor of science degree from M.I.T. He is survived by his wife, Helen Rogers Cross, two daughters, one son, three brothers, and eight grandchildren."

Due to the illness of your Secretary, in the hospital for two months, work on the letter in regard to our 50th reunion is somewhat delayed, but will come in due time. Tentative plans will be proposed and we hope all of you who read this will be ready with criticisms and suggestions, and make your plans to be in Boston June 12-15, 1953. The Class of '02 had 35 men out last June. What do we do about that? — FREDERIC A. EUSTIS, Secretary, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, Assistant Secretary, Box 103, South Wellfleet, Mass.

• 1904 •

The chief event in '04 affairs since the last edition of these notes was the dinner at the M.I.T. Faculty Club on November 13 attended by 17 local classmates with Claude Patch'02 and Don Severance'38, Alumni Secretary, as guests. The '04 members present were Cunningham, Charlie Emerson, Farrell, Fellows, Ferris,

Groves, Hayward, Hiller, Homer, Mrs. McCormick (Katherine Dexter), Milliken, Moore, Parker, Porter, Rockwood, Russell, and Stevens. It was a great event to have Stevie with us and also Charlie Homer who journeyed up from Maine to attend. The purpose of the meeting was to take steps toward setting up the machinery for our 50th reunion, and we received a good briefing on this from Patch, who was chairman of the '02 reunion last June, and Severance. These reunions don't just happen spontaneously, and the help of a lot of you will be required if things are to go off smoothly and with pleasure and profit for all.

Your volunteer secretaries were given the job of appointing the necessary committees, and their make-up will be announced in the near future. The exact location of the reunion will probably be announced in the next edition of these notes. It will probably be somewhere on Cape Cod where several possibilities are being investigated. Alert your wives of the fact that they are invited to join us. Our classmate Mrs. Katherine Dexter McCormick is chairman of the Women's Committee. Don't get the idea that 1954 is a long way off. It is really just around the corner and we suggest that you put June 11 in your date book and open a savings bank account to finance one of the most enjoyable occasions of your life. You will be hearing a lot about our 50th reunion in the months ahead, but there is one final item to announce at this time. W. S. Anthony, VI, and his good wife of 3 Irving Street, New Bedford, Mass., have agreed to receive any snap shots or other interesting material regarding '04 men and their families and prepare it for exhibiting in some interesting way. Keep this in mind for this can be made an attractive part of our reunion.

Speaking of the Anthonys, it should be stated that they had lunch recently with the Haywards at the Toll House and took great pride in showing an Eisenhower portfolio containing personal letters from Ike and Mamie, photographs of their grandchildren with a letter from the children's mother, and various newspaper clippings. The election has occurred since this portfolio was prepared and this fact may increase its historical value.

The following statistics furnished by the Alumni Office may be of interest at this time. The original roster of our Class contained the names of 491 students of whom 236 received degrees (four S.M. only). The present distribution is as follows: 214 known to be deceased, 35 with addresses unknown, 242 with known addresses. Of the latter, 133 received degrees and 109 did not receive degrees. The above figures do not include names of those who later became affiliated with other classes and are so listed.

Once more Herb Kalmus helps to provide material for class notes. The New Bedford *Standard-Times* reported a long interview with him last summer which started out as follows: "Fernbrook — Kalmus' reads the lettering on a handsomely landscaped brick gateway under the spreading elms on Centerville's Main Street. A simple sign beyond indicates that within the grounds, also, is the office

of Technicolor, Inc. The hospitably-open gateway leads to the comfortable, perfectly maintained, old-fashioned summer home of Dr. and Mrs. Herbert T. Kalmus. It is the favorite abiding place and legal residence of Dr. Kalmus, eminent head of the Technicolor industry, which has added so much to the attraction of motion pictures. When he received a *Standard-Times* reporter, Dr. Kalmus had been back only three days from one of his semi-annual trips abroad. President and general manager of Technicolor Motion Picture Corporation and Technicolor, Inc. he also is chairman of the board of Technicolor, Ltd. of England."

The interview told of the history and operations of Technicolor with comments on the motion-picture industry, and cannot be included here. In spite of his 71 years, Herb keeps up a pace which would be hard for a man half his age to follow. A second item reports that Herb had received the Samuel F. Warner Memorial Award for 1952. This award is made annually for outstanding achievement in the motion-picture industry. I think we will all agree that he deserves it. — CARLE R. HAYWARD, Room 35-304, M.I.T., Cambridge 39, Mass. EUGENE H. RUSSELL, JR., 82 Devonshire Street, Boston 9, Mass.

• 1905 •

Well, we have another news secretary, this time in Philadelphia. Claude A. Anderson, XIII, writing on his business letterhead, which says "Fans, Blowers, Cooling Towers and Dust Removal Systems," tells of some news hawking he has been doing to assist your Secretary. Andy had a visit with Herman Eisele at Cleveland last Christmas (1951), but the only news was that he was well, busy, and had not been as communicative on class matters as he should have been. It's never too late to start, Herman. Andy also reported that H. LeRoy Walker, II, had retired from the Lanston Monotype Machine Company in September, 1952, after 47 years of service. Roy has moved to a river resort near Norristown, Pa., where he can renew his interest in aquatic sports. Andy mentions "besides sitting in the effulgent glow of a well-deserved and hard-won Republican victory," he is continuing to purvey mechanical gadgets. Far from thinking of retiring, he is hoping to work as hard as ever for many years more. His married daughter, living in Auburndale, Mass., brings him back to M.I.T. occasionally. Andy's son is a lieutenant colonel on the General Staff under General J. Lawton Collins in the Pentagon Building.

Speaking of the military, Hub Kenway's son-in-law is right in the midst of the melee in Korea, will probably have the rank of brigadier general when he returns. Hub's daughter and grandchildren are living near him in Beverly, Mass. Grove Marcy has just completed a very hush-hush job at Hudson, Mass. Sam Shapira is strutting again, celebrating the birth of another grandson, born to son Norman, who is still in the service in a camp in Alabama.

At the November meeting of the M.I.T. Boston Luncheon Club on Thursday, November 20, there were present Damon, Shapira, Donald, Fisher, Buff, McLean,

Eichler, Babcock, and myself, 15 per cent of the total attendance, proving that in Boston, at least, the old '05 spirit is rampant. Damon has recently moved to Newton, still with Jackson and Moreland (Frank Carhart's firm). Harry Donald is on a seven-week service in connection with Boston's Community Fund Campaign. Andy Fisher still modestly tells of his illustrious progeny, an eight-year-old grandson, Andrew Fisher, 4th, with an I.Q. of 168, and daughter Edith doing magnificent work, both individually and with the Beacon Press (Unitarian), principally in the field of modern religious education.

Ben Lindsly, III, still living in what Claude Anderson calls "his sylvan dell" at Church Falls, Va., writes of their "five grand kids—four boys and one girl" (meaning grandchildren). The oldest, 18, entered Oklahoma University this fall; another, eight, also living in Oklahoma. Near enough to the sylvan dell to provide active entertainment are the others—two boys and a girl. Their father, Allen Dobe, is an attorney with the Department of Justice. Ben says he became "obsolescent" in governmental terms in October, but has three months of grace, after which he will try to continue in the petroleum field somewhere in the U.S.A.

Talked with Harry Wentworth's son Vincent recently. His father's condition has been static during the past year; he gets out daily for an automobile ride, is going to Florida for the winter shortly. Harry has been incapacitated now for six years, and his son says there is nothing at the moment to indicate that he will not remain in a similar condition for several years longer. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston 10, Mass.

• 1906 •

Your Secretary has in mind that our 50-year reunion is but a little over three years away and he was reminded of another "Golden Anniversary" (used by M.I.T. 1898 in referring to their 50-year reunion) when a letter was received from a fraternity brother who was seeking information for use in the 50th anniversary of the installation of Beta Chapter of Theta Chi which took place on December 13, 1902. Your Secretary was one of the early initiates, if not a charter member. Other classmates who were members were W. A. Hardy, E. R. Hyde, C. E. Johnson, B. W. Kendall, P. J. Kennedy, Jr., C. E. Lasher, R. E. Page, R. O. Reed, P. B. Webber, and T. G. Webber. Of these 11, Harding, Hyde, Johnson, and the two Webbers are now deceased. Alpha Chapter had been established at Norwich University (now located in Northfield, Vt.) in 1856. During our years at the Institute, Beta Chapter did not have a very flourishing existence but it now rates with other similar organizations at the Institute and, as a national fraternity, has 109 chapters and 30,000 members. In this connection, the Secretary had a telephone conversation with P. J. Kennedy, Jr., who is a consulting engineer in Holyoke, Mass. P. J. advised he was well and active as shown by the fact that he was leaving on the following morning on a business trip to Canada. Incidentally,

Beta Chapter is planning a suitable celebration on December 13 at which time your Secretary hopes to have a chance to visit with some other '06 men.

An address change has been received for Ralph N. Soule, VI, who is now residing at 512 Majoria Street, Coral Gables, Fla.

The Secretary regrets to report the deaths of three members of the Class, as indicated below. This seems to be an unusual number to report at one time, but it should be noted that they cover a period of several years:

Under date of October 20, the Secretary received a letter from Mrs. Margaret E. Clark in Berkeley, Calif., reporting the death of her husband, known to classmates as Bob (R. S.) Clark. Mrs. Clark wrote that Bob had so enjoyed meeting old friends at Technology this last summer that she was sure some of them would want to be informed of his death. Also, she thoughtfully sent a short sketch of Bob's life which is reproduced here: "Robert Sidney Clark died suddenly in Berkeley, Calif., on September 17. His death was due to cerebral hemorrhage. He was born in 1879 in Derry, N.H., the son of Joseph and Emily Clark. He attended Derry Academy and later graduated from St. Johnsbury Academy, in Vermont. After one year at Dartmouth College he entered . . . Technology, graduating from there in 1906. For many years he was connected with the Bowie Switch Company in San Francisco, and did much design work on the Bowie Switch which was erected at Boulder Dam. This is one of the largest high-voltage switches in the world. Later, Bob was with the Yuba Manufacturing Company, which is largely concerned with gold dredging. He was with this company until his retirement two years ago. His hobby was Spanish, which he spoke fluently, and he had enjoyed several trips to Mexico and Guatemala. He is survived by his wife, Margaret, and two brothers: Harry S. Clark of North Weare, N.H., and Augustus N. Clark of Schenectady, N.Y."

Bob was present at the Alumni Day last June and the Secretary had a very pleasant visit with him. Also, I am very sure he came to one of our reunions at Oyster Harbors, so, in spite of his residence on the West Coast, he had demonstrated his interest by returning to the Institute twice since graduation. The Secretary replied to Mrs. Clark's letter thanking her for her interest and expressing the sympathy of the Class.

The death of Louis A. Thompson has been reported as occurring February 27, 1949. Although there has been a card in the class files for Thompson, nothing has been heard from him since graduation.

S. C. Wolfe, I, died on June 23, 1952. The Secretary remembers Wolfe, as he came from Medford and commuted to the Institute with some of the rest of us. He had held numerous positions in various parts of the country and Canada. In 1918, he was reported with Lockwood Greene in Boston. The year later his address was Montreal, Quebec. In 1926, he was in Detroit, Mich., and at the time of his death he was with the Barton Marlow Company in that city. — JAMES W. KIDDER, *Secre-*

tary, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

The following fourteen '07 men gathered for one of the fine dinners served by the Technology Dining Service and for an evening of good fellowship at the Silver Room at Walker Memorial in Cambridge on Friday, November 21: Dick Ashenden, Gene Banfield, Clinton Barker, Bill Coffin, George Crane, Ellis Doucette, Bill Egan, Tom Gould, Harry Moody, Bryant Nichols, Bob Rand, Oscar Starkweather, Phil Walker, and Stanley Wires. After we had eaten, I gave the men a few facts which had come to me regarding some of our classmates and passed around some pictures that were taken at our 45-year reunion last June by Carl Bragdon and Albert Stevenson, the pictures having been contributed to the Class by these two men. Then Phil Walker showed some very fine colored motion pictures which he took at the reunion along with some colored snapshots taken at the same event. We had as our speaker Louis A. Webster, who is the director of marketing for the Massachusetts Department of Agriculture and also chairman of the Committee of Agriculture for the Massachusetts State Grange. He told us most interestingly of his long experience and wide knowledge of the development and progress of many aspects of agriculture in the state of Massachusetts, interspersing his talk with numerous amusing incidents which have actually happened to him as he has traveled up and down the state attending meetings and giving addresses for many years. The men present seemed to think that this was one of the best gatherings of our Boston group that we have ever had.

E. Leon Chaffee, professor of physics, Cruft Laboratory of Harvard University, is on sabbatical leave at the present time and expects to retire in June of 1953. — Leverett Cutten of Allentown, Pa., is still actively carrying on his hobby of silver-smithing. One of his most recent productions is a hand-crafted mace which he presented to Bates College at Lewiston, Maine, from which he graduated in 1904 before coming to M.I.T., and which is designed to be carried at the head of Bates faculty processions. On November 1, 1952, Leverett received a distinguished service award at Bates College in recognition of this very special piece of service for the institution. — According to the M.I.T. Alumni Office, the address of John T. Mahar is now 129 Gallivan Boulevard, Dorchester 24, Mass. John was a graduate of our Class in the Course in Mechanical Engineering, but I have not heard from him directly for over 40 years.

In my notes in a previous issue of The Review, I told of Harry Moody being in Brazil visiting his son. He arrived back at his home in Lexington, Mass., on August 18, after having been gone for about five months. — In another issue of The Review, in the earlier part of this year, I told of the death of the wife of Bill Otis, which occurred on February 18, 1952. They had no children, and Bill was extremely lonesome after his wife's passing,

and you will be interested to know he has written me that in September of 1952 he married Urlaville Salesbury Decker in New Canaan, Conn., this lady being a sister of a member of the Class of 1909, M.I.T., whom he has known well for many years. It is surely rather unusual for a Class which has just celebrated its 45-year anniversary to be recording the marriage of one of its members, but we certainly are glad for Bill and wish him and his wife all kinds of happiness.

In the December Review, I mentioned merely the fact of which I had just learned at that time, of the death of Harry Burhans on September 6, 1952. Harry was a graduate with us in the Course in Chemical Engineering, and from 1907 until 1926 he was an officer in the firm of Burhans and Black, Inc., of Syracuse, N.Y., dealers in wholesale hardware. In 1926 he sold out his business and since that time had not been actively engaged in any business but had done considerable traveling and had participated in miscellaneous cultural activities which often come to a man who is retired from daily business duties. His widow, Mrs. Florence Burhans, whose address is 2627 East Genesee Street, Syracuse, N.Y., wrote me that although he had not been well since last fall, he had had a pleasant summer at the family cottage at Thousand Island Park in New York, and his death occurred quite suddenly as the result of a cerebral hemorrhage.

Carl Bragdon, who has retired from active association with the Research Laboratories of Interchemical Corporation in New York City, was for many years associate editor of *Interchemical Review*, which is a quarterly publication issued by the Research Laboratories. In the issue of Autumn, 1952, a high tribute is paid to Carl for his services with this corporation. Mention is made of the fact that he had been president of the New York Paint and Varnish Club and that the editors of *Encyclopaedia Britannica* have recently asked him to revise their section on varnish. He has also frequently contributed his services to the American Society for Testing Materials and the American Chemical Society. — Late in October, I received from Allan Cullimore one of the regular bulletins of the Newark College of Engineering, Newark, N.J., of which Allan is president emeritus. This bulletin was chiefly devoted to a record of the proceedings of the meeting of the Middle Atlantic section of the American Society for Engineering Education, which was held in Newark on December 1, 1951. The bulletin is of particular interest to '07 men because Allan served as moderator at a discussion, which took place during this meeting, regarding the challenge to engineering educators that lies in the problem of establishing a proper balance between the recognized need and demand for the humanities and the basic technological requirements. — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, Assistant Secretary, 18 Summit Street, Whitinsville, Mass.

• 1911 •

All the Boston papers on October 28 carried a fine Winn Studio cut of our

peerless Assistant Secretary, with the following subtitle: "John A. Herlihy, vice-president and assistant general manager of Boston Edison Company, who recently was elected a director of the company, succeeding Robert E. Dillon [10]. A native of Lynn, Herlihy was educated at M.I.T. and has been a member of the organization since 1913." We all are very proud of you, Jack, and wish you many years of continued service to Edison!

We had a baker's dozen of Eleveners at the annual "Seven Come '11" class dinner Friday evening, November 7, and this year we had it at the new M.I.T. Faculty Club on the top floor of the fine Alfred P. Sloan, Jr., Building, which now houses the Business Administration school of the Institute in the former Lever Building at 50 Memorial Drive, Cambridge — now a part of the M.I.T. campus. Manager William B. Morrison served us a delicious dinner and there was the usual talk-around and a fine spirit of camaraderie throughout the enjoyable evening.

First on the post-prandial program was a letter of regret from President Don Stevens, II, who said he would like nothing better than to be able to attend this affair each year, but he just can't. Then followed a silent tribute to five '11 men who had died in the past year: Warren Hopkins, VI; Marc Grossmann, III; Charlie Williams, V; Charlie Ashley, III; and Gus Frigon, VI.

John Alter, IV, said that at his doctor's suggestion he was slowing up a bit and had resigned from his partnership and was practicing architecture alone again in Lawrence, Mass., where he has been located for so many years. He still maintains an interest in the Boston Architectural Center, formerly the Boston Architectural Club. Obie Clark, II, said that he must reverse his statement of the past several years; for the 1952 business of his firm, Nelson Cement Stone Company, had decreased perceptibly, so that he was taking more and more interest in his "second love," so to speak, the Quincy Cooperative Bank, largest in Massachusetts outside of Boston. He has been a director for 20 years, for the past several years has been vice-president of the bank, and now is chairman of the Security Committee.

It was fine to have George Cumings, VI, back and looking so well — even better than he did at Alumni Day last June, his first appearance at a class event since early 1951, when, 10 days after his retirement on April 1 from the New England Telephone and Telegraph Company, he suffered a serious heart attack and was hospitalized for nine weeks and then put on very limited activity for more than a year. He said he hated to miss the 40-year reunion in June, 1951, but that now he is able to drive his car once again and can get around nicely. He said he had a nice call from Bill Pead, VI, chief engineer, Gas Department, Quebec Hydro Electric Commission, in Montreal, on Columbus Day.

Class Secretary Denison reported an additional granddaughter, Laura Winslow Barton, born on June 16, putting the feminine sex ahead 4 to 3 in the third-generation Denisons. He also announced that he is currently on a bland diet, as a

result of recent x-rays showing a duodenal ulcer. — Henry Dolliver, I, still with Jackson and Moreland, engineers, Boston, said that the company has grown by leaps and bounds and now has 600 employees, with business on the whole pretty good. He said his "seventh [come 11?] grandchild" arrived in August, so like Dennie he has four granddaughters and three grandsons. He also reported that his oldest daughter and her husband had just bought a 60-acre farm in Durham, N.H., the place to which Frank Wood, II, has retired and from whence he sent regrets for this meeting. Henry also mentioned a recent Jackson and Moreland "Old-Timers Club" dinner at which there were 117 employees with 10 years or more of Jackson and Moreland service.

Fred Harrington, I, is still a resident civil engineer with Whitman and Howard, Inc., Boston, although now he is more on straight engineering, as opposed to his earlier specialization on railroad engineering. He is engaged now in a lot of plans for mobilization setups in various parts of the country. Art Leary, XI, head of the mathematics department at Hyde Park High School in Boston, said that he had been in teaching for 30 years and is enjoying it more and more as time goes on. He sincerely hopes he'll be able to continue at least five years more, for he loves the work and spoke at some length on trends in modern youth, he being of the belief that the younger generation is, on the whole, a fine set of people in whom we oldsters should have more confidence. Incidentally, Art and his wife have a nine-year-old boy, who may be the junior second-generation Eleveners. Arthur spoke also about work he has been doing of recent years for the E.T.S. (Educational Testing Service), Princeton, which was originally known as the College Entrance Examination Board. Arthur has been a member of the Mathematics Examination Committee for several years, its function being to prepare various types of math exams for entrance requirements to participating colleges. More and more, he said, they are coming to the "choice of answers" system in many of the math exams — similar to the syndicated question series in the daily press, where you have a choice of one in four as the correct answer. This, he said, permits of correction of papers by IBM or similar machines. He really gave us a fine talk, which elicited questions and proved most enjoyable.

His old side-kick, Charlie Linehan, I, is also still in the teaching profession, having been at Rindge Technical School in Cambridge for close to a quarter century. He has not been carrying on football coaching duties for a number of years, but still maintains a vigorous interest in the sport and does some scouting among the schoolboys and colleges in the area. For years he has been secretary of the Massachusetts Football Coaches Association, but he is now easing himself out of that in order to take it a bit easier. The Linehans have one daughter, now attending Sacred Heart College in Newton, and although they naturally have no grandchildren, he proudly said they had 15 grandnieces and grandnephews.

Since Jack Herlihy had been called in

mid-week to Chicago on business and was unable to be present, Roger Loud, VI, was the lone Boston Edison representative at this year's event. His older boy is now professor of mathematics at the University of Minnesota and he and his wife have two daughters. The younger son is studying for a doctor's degree while working at the Massachusetts General Hospital in Boston. Uncle Roger said he was getting bored by all the people that keep asking him what he plans to do when he retires — he still has one more year before retirement from Boston Edison after 36 years of service, and is currently district representative handling several hundred customers in steam and electric equipment.

It was a particular pleasure to welcome back Maurice Lowenberg, VI, who has seemed to be invariably away on business for Stone and Webster, Inc., whenever it's time for a class get-together. He and his wife, who reside in Brookline, have no children but they are both in good health, Maurice said. He has been busy, and he personally works in three or four trips annually through the Southwest and other shorter trips here in New England and New York State. — Morris Omansky, V, consulting chemist, says he has no immediate intention of retiring; for, in the first place, he is too busy to do so. He is very busy on consulting work concerning rubber and allied materials and is getting assignments today, he told us, from folks who thought he was "way off the beam" a decade or two ago. He and his wife have four grandchildren, evenly divided: two boys, two girls.

O. W. Stewart, I, reported six grandchildren and three on the way. Although retired for two years now, O. W. says he continues busy in community activities — particularly in Hyde Park, where he and his wife maintain legal residence. At their summer home in Kingston, O. W. says he and Gertrude now have four acres of the 25-acre estate under cultivation, both taking particular interest in the development of cultivated blueberries thereon. He still gives some time to trust fund security sales, as he enjoys guiding people to better investment opportunities when property is involved.

Aleck Yereance, I, continues as office manager of the mortgage-loan division of Prudential Life Insurance Company in Boston, and the Yereance's married daughter and her husband have three girls and a boy. Aleck has been a quarter of a century with the company and is eligible for retirement on March 1, 1955. Business continues brisk for the company locally. — Two classmates sent in acceptances, but did not appear: Harold Lord, II, and Charlie Maguire, I.

A reply card from Carl Richmond's wife, Helen, read: "Carl regrets missing this dinner. He was operated on on October 14, is now recovering nicely, but will not be discharged from the hospital until the first week in November." O. W. Stewart told us Carl reached home November 5, still quite weak from his serious operation, but hoping to be able to resume his duties with the Boston Manufacturers Mutual Fire Insurance Company. We sent Carl a round-robin greeting, signed by the 13 Eleveners present at the dinner.

Marshall Comstock, VI, who for close to 30 years has been in charge of the electrical division of Wagner Electric Corporation, Boston, retired November 1, and in sending regrets for the dinner, said he was going to the New England Baptist Hospital for a not-too-serious operation almost immediately thereafter, so will be recuperating for two weeks. We sure missed you, Marshall, for you seldom miss an '11 affair!

Ned Hall, II, sent regards to all with regrets, writing: "Have been pretty steadily in Washington since the 40th reunion, except for one trip to France and Germany with the Under-Secretary of the Army in December, 1951. Was in Paris for Christmas and enjoyed it very much!" — Hal Jenks, VI, for years with Cambridge Electric Light Company and more recently with New England Gas and Electric, sent regrets from Box 81, New Ipswich, N.H., saying: "Have retired and moved to the Granite State." — Cal Eldred, VI, Bill Hodgman, II, and Gordon Wilkes, II, all had previous engagements, and your Secretary had hoped that Harold Shaw, II, now in Gardner, Mass, as president of Arlington Chair Company, would accompany him to the affair, but unfortunately Harold had to go to New York on business.

There was just one card returned, that addressed to N. Sidney Marston, VI, Van Brunt Avenue, Dedham, Mass. We have never heard a word from this 1911 graduate since graduation, but his address has always been O.K. If anyone knows a new address, please let us know.

Pursuant to our report in the November notes that Carl Ell, XI, was principal speaker at the centennial celebration of Bowdoin College's Delta Upsilon Chapter, we learned later that he gave a brilliant talk on the "Cutting Edge of Progress," a phrase he used in defining the word "education."

"Someone has said that 'education is the cutting edge of progress,'" Carl commented. "That statement must be somewhat misleading. It seems to me that the 'cutting edge of progress' does not consist of just one element but rather that it contains four principal ingredients: native intelligence, education and training, freedom to use that education and training, and the will to put what is known to constructive use. Progress is not possible in any large way if any one of those four elements is lacking."

We got quite a kick out of the last paragraph of "This Date," by Cecelia Turbert, in the New Haven, Conn., *Journal-Register*, when she paid tribute to our own Bun Wilson, who was celebrating his 62d birthday that day, and said in conclusion: "Iron Age remarked that it is not strange that Wilson is 'so easy to beat in golf or bridge — he's got too many other things on his mind.'"

I plan my annual trek to Big Town this year on January 11 to attend the three-day convention of the American Retail Association Executives at the Statler in New York City. President Don is arranging a 1911 lunch, which I plan to attend, of course, on Tuesday, January 13, at the Tech Club of New York, 115 East 40th Street. If you are in New York that day, make it a point to attend.

Added interest in the proposed "off-year" 1911 get-together at Snow Inn, Harwichport, on Cape Cod, June 19, 20, 21, was expressed at the class dinner at M.I.T. on November 7 and present indications are that a goodly crowd will be present.

Successive issues of the *Journal of the American Institute of Architects* reveal new honors for Ralph Walker, IV. A past president of the Institute, Ralph was one of a group of seven to represent the United States in the International Conference of Artists, sponsored by UNESCO and held in Venice, Italy, September 22 to 28, according to the October issue; while in the November issue we learn: "Ralph Walker, F.A.I.A., has been named a Chevalier of the French Legion of Honor American, Societe des Architectes Diplome, succeeding Julian Clarence Levi, F.A.I.A." We continue to be most proud of you, Ralph!

We hope a lot of you get those ads from Norm DeForest, III, fruitgrower de luxe at Maitland, Fla., so that featuring, as they do, those fine citrus fruits he has been growing since 1911, they give you a chance to place orders with him. Here is Norm's modest 1952 claim: "Uniformly large fruit, washed, polished and treated with 'Flavor Seal' which preserves the Florida Sunshine, and assures you and your friends with that 'Tree Fresh Flavor.'" And we can personally vouch for the truth of the claim — wonderful fruit!

That's it for now, classmates. Remember, if you're in New York on Tuesday, January 13, drop in at the M.I.T. Club, 115 East 40th Street, for a 12:30 class luncheon. Also, don't forget that Alumni Fund subscription, if not already made — and, finally, try to get to our informal class get-together at Snow Inn, Harwichport, on Cape Cod, June 19-20-21. — ORVILLE B. DENISON, Secretary, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

The following news is taken mainly from correspondence received by Albion Davis prior to the reunion. In some cases, this is the first we have heard from the individuals for many years. Edward M. Mason wrote in March: "This is to let you know that Mrs. Mason and I will not be present at the big reunion in June. The reason is that I have just retired from the Standard Vacuum Oil Company after nearly 38 years with them and on April 3 we leave for Italy for a five-month tour of Europe. You may perhaps recall that in 1914 I went to India for our company, returning five years later. Then I married and my wife and I went out to India, to return to our New York office a year later. We settled in Ridgewood, N.J., which is our permanent home. We had two sons, both pilots in the last war. Our elder son was lost on VJ Day, after completing 144 missions flying over the Hump. Our younger son, copilot in the Navy, is now in business in New York. After returning from our trip this summer, my wife and I shall stay here and make plans for this new life of retirement together."

F. Lawrence Mowry wrote: "While it

would be fine to be with you at Harwichport the coming week end, other arrangements preclude the trip at this time. Am sure many old friendships will be happily renewed. I have continued with Swift and Company, meat packers, since graduation. Was at the St. Joseph, Mo., plant for four years, and, since then, at the general offices in Chicago, becoming assistant manager of the Construction Department." G. H. Rhodes sent the following to Johnny Noyes: "Mrs. Rhodes and I have often spoken of the pleasant evening we spent with you recently. I also received your thoughtful letter of the 21st, reminding me of the reunion. We would have liked very much to have joined you and Mrs. Noyes and all the rest, but it just didn't seem to work out. We are just in the middle of installing some major equipment and also shipping a special unit to Canada with all the complications of export forms, and so on. Also, we are trying to get away for a few weeks later in the month. Kindly remember me to all the boys who can remember me, and I assure you we will be thinking of you on the week end."

Charles A. Cary sent the following message: "This is just a note to tell you that conflict of dates will prevent me from joining the rest of the gang. Bowdoin's 150th commencement falls on the same week end, and, as I am on several committees of the boards, I cannot very well by-pass that historic occasion. I regret the circumstances, for I have looked forward to this 40th reunion of 1912 as one that I hoped to attend. I am sure it will be a most enjoyable event, and it is my misfortune that I cannot be with you." Hamilton Merrill said, in part: "On June 6 and 7, we are celebrating the 100th anniversary of our Ashcroft Gauge business, with an open house to visitors' and employees' families. It is absolutely necessary that I be present. I regret missing the reunion exceedingly."

For the record, it should be noted that the following men signed up at the Alumni Day Banquet at the Statler Hotel for another reunion in 1954: A. F. Allen, H. G. Manning, C. L. Tuller, L. M. White, Jack Lenaerts, Cy Springall, Jonathan A. Noyes, J. C. Hunsaker, A. S. Romero, Luis R. Gonzalez, Albion R. Davis, Willis R. Salisbury, Milton Kahn, George M. Sprowls, Arch Eicher, Fritz Shepard, Carlos P. Echeverria, Randall Cremer, Clarence McDonough, William C. Lynch, Jim Cook added "God willing" to his name, and Marcel Desloge stated, "if I am within 500 miles of Boston." One signature was illegible for reasons unknown.—FREDERICK J. SHEPARD, JR., *Secretary*, 21 Chestnut Street, Boston 8, Mass. *Assistant Secretaries*: LESTER M. WHITE, 4520 Lewiston Road, Niagara Falls, N.Y.; RAYMOND E. WILSON, 8 Ogden Avenue, Swarthmore, Pa.

• 1913 •

Recently at a banquet, Bill Mattson had the pleasure of sitting with two M.I.T. Alumni of the Class of 1907. When he mentioned that our Class was going to hold a reunion at the Oyster Harbors Club in 1953, they told him what a wise choice we had made and the entire conversation during the banquet was

about the many advantages that Oyster Harbors Club offers for a reunion. Both of these '07 Technology men were well qualified to give this information because their Class has already had four or five reunions at the Oyster Harbors Club and they had attended all of them. In fact, this particular Class, that graduated from Tech six years ahead of us, is so enthusiastic about this location that they do not wait for every five years, but have held several intermediate reunions at Oyster Harbors.

Bill's friends told him about the excellent golf course, the splendid accommodations and the various activities that are available—such as sailing and beautiful auto trips throughout Cape Cod, which is most attractive during the month of June. As you know, the dates for our reunion are June 12, 13, and 14, 1953. If you had been with Bill at that banquet and had listened to that conversation with these '07 Alumni, undoubtedly, you would have decided right then to make arrangements to join your 1913 classmates at the Oyster Harbors Club this coming June.

The family of Arthur Kenney, X, is scholarly, and out of the ordinary. Arthur took his master's degree in 1914, and his Ph.D. at M.I.T. in 1918. He married classmate Marion Coes, X, Class of 1918. They have two children, Stephen and Sylvia. Arthur is a physicist occupied in the highest realms of molecular arrangements as head of the physics section of Du Pont experimental station at Wilmington. He is handy with saucepan and broiler, and likes music. For some years he blew a modest clarinet in a Du Pont band organization. Last summer he acquired a new "vice" (his own word for it), which he practices on a "recorder," a simple form of flute much admired by Samuel Pepys. For the information of low-brows, myself included, the proper pronunciation of Samuel's last name is "Peeps," according to Arthur. I'm sure that it would be something to watch and listen when this vice is being indulged.

Marion was a good friend of our classmate Marion Rice Hart at Technology. They are somewhat similarly endowed in matters of personality and accomplishment. Marion Kenney overcame all obstacles, including discouraging eye trouble, to get her Ph.D. at the University of Pennsylvania in June, 1951. She is now employed in a hush-hush Washington Central Intelligence Agency, which digests information from various placement bureaus. Since Arthur told me the setup was "very esoteric," following a trip to Webster's unabridged dictionary, I can infer that Marion's work is in the highest reaches. Stephen at 12 years spoke French, could recognize Poland China breeding in a hog, composed music, played the cello, and would rush out of doors immediately following a violent thunder storm to whiff the attendant ozone. This gentle scholar, in World War II, went from Harvard to the Air Force to become a bombardier. Stephen is teaching English in a boarding high school for boys and girls, run by the state of Nebraska, in a very sparsely settled area. He spent last summer working on a combine harvester in which he had bought a part

interest. Scholar Sylvia, a talented viola player, spent a summer in Los Angeles studying on her instrument with Primrose, the top virtuoso in this country. She is, via Yale University, on the trail (which no Kenney ever loses) of her doctor's degree in history of music. After a year in Belgium, whence came Arthur's recorder, she went last fall to Wells College, on Cayuga Lake, to teach history of music, viola, and violin.

From Bob Weeks, VI: "It was a shock, indeed, to read of the death of Hap Peck in the 1913 class notes in the November issue of *The Review*. Harry Peck was a grand person. I wish I had had the information of his death, because I would have attended the funeral. It naturally is out of the question to keep fully informed on the deaths of the various members of the Class, even those whom I have known the best. It is disturbing to see so many of the Class passing away. I am afraid that there is not much that can be done about it, because we are all reaching the age in life where we can expect to pass along as those who have preceded us in the past generation. I am making a number of trips around the country. I have not been up to Rhode Island and will certainly make it a point in trying to do so before long, as I would like awfully well to have a chance to sit down and talk to you again before the reunion."

C. W. Gotherman, VI: "Am planning to come to the 40th reunion—in fact Gil Pardey and I decided on it a year ago—make it good!" I promise you, Charles, we'll make it good and plenty. Si Champlin, V, sent a clipping from the Cincinnati *Times Star*, of September 18, 1952, showing a picture of the four newly elected directors of the Greater Cincinnati Savings and Loan Exchange; one of them is Edgar Menderson, II. Herbert B. Cady, XIII, has recently been named to the post of chief naval architect of the Electric Boat Division of General Dynamics Corporation, at New London, Conn.

Herbert and his wife live in Groton, Conn., and have two children. He went to New London back in 1918.

The following news of D. B. Armstrong, VII, S.M., appeared in the July, '52, issue of the Louisville, Ky., *Insurance Index*: "Dr. Donald B. Armstrong, second vice president of the Metropolitan Life Insurance Company and a noted public health authority, has informed the company's board of directors of his intention to retire from his post as head of the Health and Welfare Division on December 31, 1953, it was announced by Metropolitan President Charles G. Taylor, Jr. Dr. Armstrong joined the Metropolitan when he was appointed executive director of the famous Framingham tuberculosis and public health demonstration in 1916. His first official title was assistant secretary. He was advanced to fourth vice president in 1929, to third vice president in 1931, and to second vice president in 1944. The Framingham demonstration, which was conducted by the National Tuberculosis Association under an appropriation granted by the Metropolitan and was the first such project ever undertaken by a private organization, had as its primary aim the reduction of the tuberculo-

sis death rate. Using the entire community of Framingham, Mass., as a proving ground, the demonstration showed that not only the tuberculosis death rate, but the deaths from other diseases as well, could be reduced when proper measures for their discovery and treatment were taken. Dr. Armstrong, who was born in 1886 at Bangor, Pa., holds degrees from Lafayette College, Massachusetts Institute of Technology, and the College of Physicians and Surgeons, Columbia University. He is a diplomate of the American Board of Preventive Medicine and Public Health."

Not only does Bill Mattson, I, come to bat for us at reunion times, he serves many other worthy causes. The following tribute was paid him by the Kappa Sigma Fraternity, at M.I.T.: "In December, William R. Mattson retired as President of the Gamma Pi Corporation. This action brought to a close a period of service covering forty years. Brother Mattson was one of the founders of Delta Kappa Phi, the local which was to become Gamma Pi of Kappa Sigma. A leader in both his fraternity and in his school (President of his Senior Class), he continued to take an active interest in the chapter after graduation. He was instrumental in raising money needed to purchase the present chapter house at '33.' He served as Corporation prexy for 28 years. He has always regarded the chapter as his son. For the past seventeen years, Brother Mattson has been with the American Locker Company, during which time it has grown to be a nationwide organization. The coin-in-slot rental lockers are a familiar sight in almost every rail or bus terminal throughout the country. He is now a vice-president of this firm. He has been an Alderman for the City of Newton for the past eight years, and takes an active interest in Republican politics, along with the rest of his family. We, of the active chapter, feel certain that the alumni will join us in expressing our appreciation to Brother Mattson for the great service he has rendered the chapter and wishing him happiness and luck in the years to come."

It is reported that Ralph Rankin, VI, has bought a place in Sarasota, Fla., with retirement in prospect. He will be a neighbor of Sam Rogers and within calling distance of Nate Poor at St. Petersburg. Address changes: Ellis W. Hartford, II, Post Office Box 9131, Station S, Los Angeles 5, Calif.; Nathan H. Poor, 2d, X, 265 Catalan Boulevard, Snell Isle, St. Petersburg, Fla.; Samuel E. Rogers, II, Route No. 4, Box 963, Sarasota, Fla.; Commander Charles D. Swain, II, 2673 Narcissus Drive, San Diego, Calif.; Major General James V. Young, Hamilton Cotton Company, Ltd., Hamilton, Ontario, Canada; John P. Coe, Amity Road, Woodbridge, Conn.

By the time you read these notes you will have been exhorted by Joe MacKinnon, Class Treasurer, to A, cough up five dollars, and B, write your Class Secretary. In the Gilbert and Sullivan opera, the Mikado of Japan sings: "See how the fates their gifts allot; for A is happy — B is not; yet B is worthy, I dare say; of more prosperity than A." Moral: Make B happy

too. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 788, Pawtucket, R.I.

• 1914 •

In the last issue of these notes, reference was made to a trip to Korea taken by Herman Affel. He has subsequently been heard from, and the following is an extract from his letter: "I was a member of a technical mission requested by Army Secretary Pace, whose general object it was to investigate matters connected with the applications of electronics and communications in the war areas. The trip actually included stops in Alaska, Japan, and Hawaii, as well as Korea which was the focal point of our activities. We flew some 20,000 miles in about four weeks in special planes furnished by the various military services. This particular aspect of the trip, while interesting, was comparatively uneventful. It was an important part of the mission's function to get close to the soldier at the front and we naturally made many visits where we had a good view of what was going on and the conditions under which the soldier has to fight. Needless to say, the whole trip was a very exciting and a once-in-a-lifetime experience."

The John Hancock Mutual Life Insurance Company has recently elected Tom Chase as assistant treasurer of that organization. Chase started out with the Boston and Albany Railroad, but for the past 22 years he has been associated with John Hancock, his work being largely in the City Mortgage Department.

From time to time, O. C. Hall seems to do something that attracts attention to his activities. The latest your Secretary noticed was that he had been issued a patent on "Rotary Out-Trunk Switching Arrangements." O.C. is with the Bell Laboratories and apparently is still actively engaged in development work. Your Secretary recently received a fine letter from Alden Waitt, who has moved to San Antonio, Texas. Alden writes that Mrs. Waitt and he are enjoying their new home and have found many old friends in that area. Already a Texan, he glossed over the very hot weather of last summer but said that, at the time of writing, beautiful fall weather had set in and he was looking forward with a great deal of pleasure to spending the winter months outside of the snow belt.

George Whitwell continues his very active association with chamber of commerce and trade groups. One of the groups in which he has been particularly active is the American Gas Association, which elected him a director. Perhaps all gas companies are not limited to the sale of gas, but at first blush it seems a bit surprising for the vice-president in charge of sales of one of the country's largest electric companies to be such an active member of a gas association. George also finds time to serve as a director of the Chamber of Commerce of the United States, being very active on several important committees. He is also a director of the National Association of Manufacturers.

Welton Snow, for many years, except time out for World War II, has been associated with the Associated General Con-

tractors of America, whose headquarters are in Washington. He was a recent speaker on the subject of apprenticeship. In addition to his position as manager of the building division of the association, he is secretary of the association's Apprenticeship Committee.

Ross Dickson is anxious to have the Class reminded that he is still class agent and that the class fund is again running along at full speed. If your 1952-1953 contribution has not been sent in as yet, Ross will be particularly anxious to hear from you. — H. B. RICHMOND, *Secretary*, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. ROSS H. DICKSON, *Assistant Secretary*, 126 Morristown Road, Elizabeth, N.J.

• 1915 •

Forty-two classmates and their guests set an all-time record for attendance at our Boston class dinner, November 14, 1952, at the new M.I.T. Faculty Club, Cambridge. The atmosphere and environment of this delightful place, with the enjoyable dinner, made this the most outstandingly successful dinner we've had. Meeting together were: Bert Adams, Whit Brown, Harold Colby, Marshall Dalton, Sam Eisenberg, Reggie Foster, Don Fowle, Fannie Freeman, Abe Hamburg, David Hamburg (Abe's son), Loring Hayward, Loring Hayward, Jr. (Loring's son), Wink Howlett, Clive Lacy, Larry Landers, Carle Lovell, Azel Mack, Jim Hoey, Jr., '43 (my guest), Hank Marion, George Moulton, Archie Morrison, Frank Murphy, Harry Murphy, Johnnie O'Brien, Wally Pike, Jesse Potter, Pirate Rooney with his guests — R. W. McCormick and A. W. Anderson, Chet Runels, Al Sampson, Jac Sindler, Henry Sheils, W. P. Jones (Henry's guest), Frank Scully, Ed Sullivan, Speed Swift, Eastie Weaver, Carl Wood, Max Woythaler, Louis Clemens (Max's guest), Louie Young — all to add up to a wonderful showing of fine class interest. Informal as we were, of necessity we had to have a head table, impressively dignified by Jack Dalton, Frank Scully, Hank Marion, Al Sampson, Speed Swift, and Jim Hoey, Jr., '43.

As our guests were introduced, they were heartily welcomed with the hope they and many others will come to our next dinner. "Long time, no see" men were Bert Adams, Carle Lovell, Jesse Potter, and Carl Wood — all gladly brought back into the class fold. Long-distance acclaims went to Whit Brown, Concord; Al Sampson, Beverly; Max Woythaler and Louis Clemens, Framingham; Reggie Foster and Chet Runels, Lowell; Loring Hayward and Loring, Jr., Taunton; Speed Swift, 100 miles, from New London, N.H., and (the winnah!) Hank Marion, who came up from New York for this dinner. Now, there's the height of class spirit and loyalty for Hank to come up here from New York for this dinner. He's done it before, but this time he set a shining example for us all. These chaps, Hank, particularly, received a big hand from our classmates. We all signed a "good cheer" card to Gene Place who is desperately low in Pasadena. We paid tribute to the memory of the recently de-

ceased Fifteeners — a sad moment for us all — Fred Davis, Louis Gale, Julius Kuttner, Gerald Walsh, Brick Warfield, Ernie Weaver, and Edward Pratt.

We needed no speeches nor entertainment, but the evening was sparked by a few words from Max on our improvement in Alumni Fund contributions and the need to continue our generous giving; a glad word from Hank (and certainly a grand guy to be with us); a pretty fair rendition, at this age, by Speed Swift of our old Tech Show song, "There Are Three Reasons Why Men Drink." He did a commendable job with those high notes. A word from Al Sampson on class spirit; a heart-warming talk from Jack Dalton on the real sentiments and friendships in 1915 and the deep impression of this splendid dinner attendance. Frank gave a colorful account of his interesting summer in Europe with his observations on the political and economic conditions in the countries he visited. Jim Hoey, chairman of the 1943 10th reunion, to be held June, 1953, said he hopes they can model their Class and their reunion after 1915, an excellent model. Among the sons of 1915 in 1943 are Bill Place and Gene Eisenberg. We were glad to have the class sons, David Hamburg and Loring Hayward, Jr., with us at this dinner and urge other '15 sons (old enough) to join us at the next party. After dinner, a delegation of "die-hards" sat up with Hank at his hotel to relive old times and plan new ones. From all this you can easily see why and how this was the all-star dinner to top all class dinners. Frank Scully has invited the Boston gang and their wives to his Belmont home for Saturday afternoon, January 10, 1953. This is indeed kind and thoughtful of Frank and should be an excellent time for all who attend. Herb Swift would like any Fifteeners ever in the neighborhood of New London, N.H., to drop in to see him at "Windy Acres," his place up there.

Congratulations to Huet Massue for his outstanding work: "Dr. Huet Massue, P.Eng., engineer-economist of the Shawinigan Water and Power Company and a director of Atomic Energy of Canada Limited, has been appointed manager of Shawinigan's newly-established economics and statistics department, it was announced by J. A. Fuller, president. The department will compile and co-ordinate all of the company's statistics and will carry out economic studies affecting Shawinigan's operations. A native Mont-realer, educated at the Ecole Polytechnique and the Massachusetts Institute of Technology, and a member of the Shawinigan Company staff for 25 years, Dr. Massue is widely known for his researches on the electric industry in Canada and other countries, transportation, education, hospitals and other subjects. He won special attention in the United States a few years ago for his study of the economics of the Tennessee Valley Authority."

With his generous check for dues last March, Loring Hall wrote from Detroit: "There's one good thing about your dues reminders. They remind us also to drop you a note. Sorry I didn't see you on your last visit to Detroit. Our timing doesn't

seem to coincide. I still have only the three grandchildren, but Richard is still unmarried, so my prospects may improve when he takes the plunge. It has always seemed strange to me that so few 1915 men ended up in this vicinity. The official lists have included men who were said to be 'Fifteeners' but turned out to be so 'in name only.' Best regards to you and to those you represent so well."

Adding to his grandfather laurels, Doug Baker writes splendidly from 332 North Maple Avenue, East Orange, N.J.: "This past year has been rather hectic for the Baker family, now of almost tribal size if not cohesion. A relation of events might be of interest but not appropriate for the class notes. However, I hope to see you some time and by then we should be over the hump. My wife and I and most branches of the family are in good health. Our household is enlivened at present, and probably for some time to come, by a charming two-year-old granddaughter. The generation of which she is representative appears to be more obstreperous and to wake up earlier than the preceding one, but perhaps that is just because her grandparents have become de-conditioned. Best regards and good wishes."

From 409 East Buffalo Street, Ithaca, N.Y., Harold Pickering writes a fine letter. He's kind to invite us to Canada for ice fishing, but I think Ardelle and Wally Pike would join Fran and me in preferring "steam-heated snow" — we're distinctly indoor sports. Ha! See how he compares those men from a well-known college to our M.I.T. men. Come on to Boston, Pick, and join us for the next class dinner: "This is toward the end of the heating season and we have not had much snow. I'm sorry for you poor cusses who had to fight through it all. A snow like yours makes it tough on service calls. Ithaca has been quite open in spite of the heavy snows east and west and north of us. Tell Wally Pike I'm going after some big ones when ice is out in May. I'll tag one for him and have it ready in August if he gets up this year. Why don't you come with him, Azel (if you like camp life)? And bring the wife, too. My wife loves the woods. The stock I bought in a mine a few miles from my camp has more than doubled. And they have followed silver and cobalt veins, too, within a dozen miles of camp. I have no mineral claims, however, and probably wouldn't recognize silver unless it had Roosevelt's head on it. Stillman Haynes, III, '32, visited me and said the rocks around me contained no ores. Two Harvard men (with five degrees between them) camped where the million-dollar Quenont Mine now is and turned down the prospector who wanted them to stake the claim they camped upon. But I believe a Tech man anyhow. I hope you prefer this scrawl to nothing, and one of these days I would like to join some of you at one of those Boston lunches I read about in *The Review*."

With these notes go best wishes from Fran and me to all you Fifteeners for a happy and successful 1953, with the hope you and your families have had an enjoyable holiday season. — AZEL W.

MACK, Secretary, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

Another new year, but the same old tune/ But give good cheer, because come next June/ God willing that we're all able/ We'll gather round the reunion table.

Murray Horwood has been in prominent print recently. In a series of four articles, starting in February and ending in May, 1952, his story on "Sixty Years of Progress in Sanitation 1890-1950," appeared in *Modern Sanitation*. The substance of the paper was presented at the 60th anniversary celebration of the Massachusetts Public Health Association, held in Boston in April, 1950. He outlines the many achievements of paramount importance in the field of sanitation over the past 60 years. Much credit is given to Professor William T. Sedgwick of M.I.T., whom we all remember so well during our undergraduate years and whose familiar photograph is shown in Murray's paper. Way back when we were about to be born, Professor Sedgwick made epidemiological investigations on water-borne typhoid fever from public water supplies. At about the same time, he conducted in Boston what was probably the first bacterial survey ever made of the milk supply of a municipality and directed attention to the need for giving consideration to a major public health problem. It's a good story and well worth reading. Murray, himself, is an outstanding authority in sanitary science. We note that one of his references is a paper by our Gordon Fair'16 from his important post at Harvard. You will recall that in our previous column, we mentioned that Murray has gone over to Rangoon, Burma, on a special project. It was interesting to note in a report from the Alumni Council that he visited the M.I.T. Clubs at Honolulu and Hong Kong on the way over to his new station, the University of Rangoon, where a team of five engineering specialists, under Murray, has been sent by the Technical Cooperation Administration to assist that university's engineering faculty in its teaching and research programs. Good luck to you, Murray, in this new undertaking.

Here's a clipping which we recently received from Dick Berger: "Bridgeport's Dick Berger, who does such a fine job of impersonating President Harry S. Truman, did a lot of rehearsing last week that was eventually wasted. Berger was set to play Truman in a sketch on the Milton Berle television show last Tuesday night. He was all made up and ready to go on when shortly before telecast time an order arrived from the Federal Communications Commission ordering the dropping of his characterization. On the show Berger was supposed to have portrayed Truman picking up an unemployment compensation check. Berger got paid for his time, but he probably would have given five times the fee to have been able to fulfill his role in the show." Don't feel badly Dick; it's a penalty of success to be kicked off television right off the bat.

We were pleased to receive this letter from Nick Balyozian: "I was certainly glad to hear from you. I am sorry to say

that I was not able to go to the class reunion last June. At present I am with the Woburn Chemical Corporation, Harrison, N.J., doing research on styrenated oils, conjugation of nondrying oils, and similar problems. I tried hard to get a job nearer Boston where I would like to be, but without success. I spend my vacations on Nantucket Island with my nieces. As you know, I am still single, but have sort of gotten used to it. If you ever happen to be in this vicinity, don't hesitate to let me know, as we could get together for dinner at a mutually convenient place. Remember me to other members of the Class."

Paul Buxton writes: "I have your letter and it is indeed a long time since I have seen you. It was with great regret that I could not make the reunion week end last June. Unfortunately, June is the start of the construction season with us and I am usually very badly tied up at that time. Since the passing of my father and mother several years ago in Boston, I do not have much occasion to get up that way, but you may be sure that if I have the opportunity I will look you up. I see the group of Alumni in St. Louis from time to time, especially Chuck Loomis of our Class. Statistically, I do not have much news, but am reminded that time is slipping by for all of us. I have two grandsons, one aged eight and one aged five, who, with my daughter and her husband, are living in Houston, Texas, at this time. My son Charles is still at home but is planning to be married in February. Alton is only 20 miles from St. Louis and I certainly would be very pleased to hear of any of the Class when in this vicinity." Mentioning grandchildren reminds your Secretary that he hasn't bragged about the arrival of his fifth grandchild in this column yet. Your Class Secretary's daughter, Cynthia, gave birth to a bouncing seven pound, four ounce, baby boy, Timothy Wade (Robinson), on October 29, at the Lakewood Hospital in Cleveland, Ohio.

Chuck Loomis recently wrote: "I had a long and welcome letter from Phil Baker, from whom I hadn't heard in a good many years. He is still carrying on the J. Lee Baker real estate business in Detroit and sees Ted Hine and Milt Pettibone '17 often. The letter, incidentally, was written because you had sent him a copy of the photograph of the last reunion and he had noticed that I wasn't among those present."

We received this one from Dina Coleman: "I was very glad to get your letter and, of course, to know that the reunion was enjoyed by all. I am sorry to have missed it. Somehow or other, with the passing of years, the urge to get up and go places is disappearing and I am sorry that it is so. Perhaps next year things will be different. I hope so anyway. There are no new developments in my business, personal, or family life worth reporting, but I will keep your invitation in mind and in the not-too-distant future we will get together."

Joe Brodout in Riverside, Calif., sent us this letter: "Things with me are not going too badly. Have my ups and downs same as everybody else. However, I can't

complain. I can well imagine the grand and glorious celebration of last June. You can rest assured that the absentees have digested your recounting of the event with much interest. It must be quite a satisfaction to you and your associates that the occasion was a success. [Your Secretaries speaking: We are very pleased but we could be even more so if it weren't for the fact that year after year there are so many who could and should be present who do not come and who are therefore missing a really wonderful time.] As for news of myself, I am in the same dilemma as of yore. Activities, contacts, and so on, with a bit of connivance on my part are at a minimum. Dreadful life, n'est-ce pas? However, drear though it may seem, I am reasonably content, so what more could one ask for. Would that I could be more helpful in your reportorial efforts."

Here's an interesting letter we received from Ed Barry: "I need not tell you how poor a correspondent I am. You have asked me so many times of news of myself that you are certainly entitled to an answer. There is not much to say. I am still on the engineering staff of Stone and Webster, specializing in steam-power plants. This has been my vocational hobby since 1927. My present connection dates from 1942. I seldom run into classmates, although I have done considerable traveling, including the trip to Turkey in 1948. I did see Jimmy Evans at an American Society of Mechanical Engineers meeting in Atlantic City a year ago. I have been active in A.S.M.E. affairs recently, having just completed a term as chairman of the Boston section, and I am currently serving on its Executive Committee. I also take a small part in activities of Engineering Societies of New England, Massachusetts Society of Professional Engineers, and Newcomen Society of Harvard Engineering Society. For pure enjoyment, I belong to the Harvard Musical Association and play in its orchestra. Thank you for your invitation to drop in on you at West Chelmsford. I reciprocate by hoping you may find it possible to look me up in Needham, Boston, or during the summer on Governors Island, Lake Winnepesaukee."

Charlie Cellarius recently sent us this letter: "I am still practicing architecture in Cincinnati, current work including buildings for Miami University, Oxford, Ohio; Berea College in Kentucky; and for the College of Wooster at Wooster, Ohio. I am also busy with some school work, including a three-million-dollar high school for Cincinnati. In recent years, the office has also gone into the church field and I have, at present, five churches under construction. You may not have known that after being a widower for nearly 20 years, I was married to Mrs. Mary Curtis of Cincinnati in 1950, and we are living in a stone Colonial at 3522 Principio Avenue, Cincinnati. I haven't seen any of our classmates recently, but extend my best wishes to any of them that you meet." Our belated congratulations and best wishes for happiness to you on your recent marriage, Charlie.

We are sorry to have to report the passing of Emory Kemp's father on Saturday,

November 15. The sympathies of the Class are extended to Emory.

Dan Comiskey '17 came through with this one: "Very pleased to hear from you, and, as the saying goes, 'If you want something done, ask a busy man.' You could qualify surely. I read in the *Herald* today of the passing of Emory's [Kemp] father at 86 in Wellfleet, surely a full span of life. I see Bridgie Webber '17 frequently in Wellesley. He is quite well, is with McGinnis and Walsh. Jack Hickey is fine. His son was married last month. Tom Berrigan was exhausted the last time I talked to him—field inspection of new metropolitan sewer in Needham. The best of wishes to all."

Congratulations are in order to Steve Brophy and the American Heritage Foundation, of which he is president, for the wonderful job they did in getting out the voters in the recent national election.

In the November, 1952, issue of *Civil Engineering*, on page 60, Walt Binger appeared in a group photograph which had the following accompanying caption: "Incoming Board of Direction is photographed at ASCE Headquarters in New York on October 15. . . . In the third row are Walter D. Binger, Director, District 1. . . ." We also received a nice note from Walt recently in which he enclosed a copy of "Nineteen Sixteen News," the advance publicity of the 20th reunion at Riversea Inn, Old Saybrook, Conn. We got a big kick out of reading it and thought you might get a few chuckles from this item which appeared in that paper: "The reunion dinner, with cabaret features, including the '1916 Varieties' staged by Steve Whitney and featuring Rusty White, the New Hampshire Nightingale; Phil Baker, minus the accordion; I. B. McDaniel, the Eddie Duchin of the U.S. Navy; Bill Farthing, Kate Smith's only rival; Hovey Freeman, strip star of Minsky's 42nd St. Burlesque; and Ralph Fletcher with his Hill Billy Band. Lights out at 5:00 A.M." Those were the good old days, weren't they? Some of the guys have gone along, but memories of them will be with us always.

Here, in part, is an article which appeared in a recent issue of *Science News Letter*, calling attention to another of Dr. Bush's many activities: "Dr. Vannevar Bush, president of the Carnegie Institution of Washington and head of U.S. wartime scientific research, has turned his talents to improving a machine used in every hospital laboratory that does cancer diagnostic work as well as in countless medical research laboratories. The machine is a microtome for slicing bits of body tissue thinner than most tissue paper so that the cells of these tissues can be examined under the microscope. Ordinary microtomes look, roughly, like the machines butchers use to slice ham or other meat. They are hand operated and the very tedious job of putting the super-thin, fragile slices onto a glass microscope slide is also done by hand. Dr. Bush's machine, does the whole thing automatically. The bit of tissue from the operating room, autopsy room or research laboratory is, as usual, put into liquid paraffin. When this has hardened it is ready for the microtome. But with Dr. Bush's automatic machine,

moving picture film is pressed onto the block and the slices, or sections as they are called, of tissue come off mounted on the movie film. Besides the time and trouble saved by the new machine, there is further advantage that the sections are accurately and automatically registered. If a dozen sections of tissue are wanted, for example, there can be no doubt about the order in which they come. For research and sometimes diagnostic work, this is important."

You probably wondered why we began this column with a little verse. The reason is that we wanted to balance the beginning of the column with the ending. The wonderful bit of poetry which George Petit sent as recently follows as a closing for this column:

Not to my knowledge has verse been used/ In an effort to have this column perused./ But we'll try it once before police intervene/ To incarcerate this member of the Class of Sixteen./ Fletcher and Dodge, Dodge and Fletcher/ Are always plugging for letters you betcha/ To fill the space in the Tech Review/ And elicit a response from the remaining few./ So pick up your pens for worse or better/ To please the guys with an overdue letter./ For we're all in a mood of expectant hope/ That you'll appear in print with the looked-for dope/ And don't miss the reunions on the Cape/ So on the bar your form may drape/ In complete repose from labor's woes./ And that's the way this jingle goes./ Your classmate, George.

Thank you very much, George. It's a good job and one that may bring in the news for us where our regular monthly pleas have failed. — RALPH A. FLETCHER, Secretary, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, Assistant Secretary, Bell Telephone Laboratories, 463 West Street, New York, N.Y.

• 1917 •

We regret that this section of The Review does not carry pictures, for we have two interesting ones. A recent issue of the Milwaukee Journal depicts Mr. and Mrs. Philip N. Cristal attending a performance of the Chicago Symphony Orchestra. They both look awfully glum for such a festive occasion. The other picture, from the house organ of the Union Sulphur and Oil Corporation, which goes by the rather unique title of *The Imp Print*, shows Dick Lyons being briefed on his duties as the new president of this company. We quote from the lead article of the October issue of this publication: "Mr. Lyons brings a wealth of experience in oil and gas exploration and executive work with him. A graduate of . . . Technology, he entered the army in 1917 and upon his discharge settled in the Southwest. He has worked in Texas and Oklahoma for 33 years, which includes a stint of one and one half years in Venezuela. Mr. Lyons comes to Union Sulphur from 16 years with the Mid Continent Division of Tide Water Associated Oil Company where he was vice president in charge of exploration. Prior to that he was vice president of Skelly Oil Company and was connected with that company for 12 years. He has lived in Houston for a number of years and is

well known in the oil industry. His home is at 2211 Inwood Drive."

Al Moody informs us that his company has again moved him to a new construction job about 60 miles south of Chicago where he is building another compressor station in connection with a new underground gas storage project. Al's new address is Box 412, Herscher, Ill.

It was decided at the reunion in June to renew our efforts on the 50th reunion class gift. Joe McManus, Dick Catlett, Johnny Holton, and Tom Ryan have joined the elite group of contributors, and we have promises for action in the near future from Dick Lyons, Haig Solakian, Fred Stearns, and Hu Wellcome. Hu is engaged in important development work for the Navy in connection with his cable dispenser which he invented and is producing at his plant in Bridgeport, Conn.

— RAYMOND STEVENS, Secretary, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, Assistant Secretary, 24 Federal Street, Boston 10, Mass.

• 1918 •

The Lynn, Mass., *Item* bestowed its "Bouquet of the Week" on Sam Chamberlain in recognition of his talent and fame as a photographer. It goes on to say: "Though he is most popularly known as a photographer whose work graces *The New England Calendar* and other annuals, Mr. Chamberlain also ranks high in the world of art as an etcher. Gifted since boyhood as an artist, he was born in Cresco, Ia., and attended the University of Washington. He later studied with Edouard Leon, the famous artist, in Paris and his etchings were famous long before he became a noted photographer. Examples of his work as an etcher are still on exhibition in the British Museum, La Bibliothèque Nationale of Paris, the Library of Congress and the Boston Museum of Fine Arts. Mr. Chamberlain's fame as a photographer of Colonial houses and New England scenes stems from his early interest in architecture as assistant professor of architecture at the University of Michigan. His busy career has been interrupted twice by war service in World War I as an ambulance driver and in World War II as an Air Force captain stationed in London. He holds the French Croix de Guerre for bravery. In his Marblehead studio are some 50,000 magnificent negatives which have been used to illustrate scores of books and art calendars during the past 25 years. The artist's latest books include *Camera Impressions of Sturbridge Village*, *Beuport*, *Frontiers of Freedom* and *Who Lives Here?*"

Plans for reunion take shape. Take a look at your old friends who say they will be there: T. A. Pierson, Leonard I. Levine, John R. Poteat, Thomas M. Knowland, Saxton W. Fletcher, Harold E. Collins, Donald C. Goss, George Halfacre, Herbert B. Lerner, John Purves, John M. Hanley, Joseph "Band of America" Kelley, Thomas "Lilly Varnish" Kelly, Theodore Wright, F. Alexander Magoun, Max Seltzer, Royal Barry Wills, and, of course — GRETCHEN A. PALMER, Secretary, The Thomas School, The Wilson Road, Rowayton, Conn.

Ben H. Bristol wrote recently to say that he spent a few days fishing up in Newfoundland "with reasonable results." He also spent a couple of weeks over in England this past September to check up on his business affiliations there. Harry Cikins is still going strong in the field of life insurance after 21 years. We extend our belated congratulations on the celebration of his 30th wedding anniversary on June 20. Two of his three sons are now studying for their Ph.D.'s in public administration.

Received a note from Oscar de Lima recently and he writes: "This is my most recent effort. I'm the party responsible for the guide service at UN headquarters." Horace W. Denison writes that he got the greatest kick from the first granddaughter. He continues: "Beautiful child, of course. Future customer for elastic we continue to produce for the ladies." A wonderful vacation was spent out in Glacier Park and Seattle by our classmate, E. F. Doten. He writes that Charlie Chayne was the good host to the Detroit M.I.T. Association at the General Motors Proving Ground in Milford, for the September meeting. During a week end spent recently at the new home of George McCarten in Pepper Pike, outside Cleveland, they discussed our '54 reunion. They are both looking forward to it and have marked the calendar for this occasion. Their very best regards are sent to all.

"We are now the proud grandparents of a very cute granddaughter," writes C. J. Farist. His daughter, Ann, after graduation from Radcliffe in June, 1950, married Richard A. Butler, Jr., Class of 1950 of Harvard. He is the son of Richard A. Butler of Northboro, Mass., Class of 1926 of M.I.T.

No news from Palmerton, writes Doc Flynn, but "this will let you know we are still alive." Best regards are sent to all. Had an interesting card from L. A. Gillett, which I quote: "Nothing much to report about myself. Railroad (coal) business good until J. L. Lewis decided to run the country. My son, Richard, graduated from M.I.T. last June — Course XV graduate school — and now works for Du Pont on the production end at the Savannah River atomic energy plant near Aiken, S.C. Likes it but, naturally, I haven't the slightest idea what he is doing there."

During the American Petroleum Institute Convention held in Chicago in November, your Secretary saw Jack Fleckenstein. Among other things, he mentioned that his daughter is now a senior at M.I.T. in Geology and expects to enter Harvard Law School next year. While out in the Midwest, I also spent an evening with Mr. and Mrs. George McCarten, in Cleveland. He is anxious to get the '19 men lined up for our 35th reunion in the East. Mac is very prosperous and happy, and plays golf now over the famous Canterbury course at Shaker Heights. I also learned that Nelson Bond has changed his residence to 300 Broadway, Dobbs Ferry, N.Y., and we hope that he and his family will be very happy in their new quarters. — EUGENE R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

Happy New Year! Congratulations, too, to four members of the Class whose sons have just returned to M.I.T. after the holidays to continue in their freshman year. Prospective graduates in 1956, at the time of our 35th reunion, are: James L. Dougherty, son of Isaac Dougherty, President, Associated Chemists, Inc., North Collins, N.Y.; Franklin T. Flaherty, Jr., son of Franklin T. Flaherty, patent lawyer with Du Pont in Wilmington, Del.; William F. Hotchkiss, son of J. Rowland Hotchkiss, President, Palnut Company, Irvington, N.J.; James D. Stillman, son of Henry C. Stillman of Haverhill, Mass. Other sons of members of the Class now at the Institute are (parent's name in parentheses): Graduate School — Herbert C. De Staebler, Jr. (Herbert C. De Staebler); Seniors — William C. Church (Walter E. Church), Nelson C. Lees (Cornelia Nelson Lees), Edward H. Schwarz (Edward R. Schwarz); Juniors — Evan T. Colton (H. Seymour Colton), Peter Felsenthal (Robert M. Felsenthal), Melvin R. Mattson (John B. Mattson), Robert D. Moore, Jr. (Robert D. Moore); Sophomores — Stanley H. Barriger (John F. Barriger), Myles J. Kiley (Albert J. Kiley). Have we overlooked anyone? From unofficial records which your Secretary has kept since 1942, 41 members of the Class have sent 47 sons and two nephews to M.I.T. Fred Adams, Jack Barriger, Rod Bent, Walt Church, Seymour Colton, John Mattson, Andy McKee, and Charlie Thornton have each sent two sons to Technology. Those with one representative each from our junior league are: Paul Anderson, Larry Conant, Jim Cudworth, Herb De Staebler, Ike Dougherty, Bill Emery, the late Jack Facey, Bob Felsenthal, Joe Flaherty, Jim Hotchkiss, Mark Ireland, Irv Jakobson (nephew), Mel Jenney, Al Kiley, Chick Kurth, John Lee, Connie Lees, Bill Loesch, Win Libbey, the late Joe Lurie, Deck McAllister, Bill McGorum, Bob Moore, Dan Noce, Harry Rosenfield, Ray St. Laurent (nephew), Sumner Schein, Stan Scott, Ed Schwarz, Sid Senzer, Hank Stillman, Bob Thurston, Jack Whipple. Again, have we omitted anybody?

We had a pleasant telephone conversation with Dick Spitz, who is sales manager of Newport Industries, Inc., New York City, on the occasion of the appearance in print of a society note regarding the M.I.T. son of a totally unrelated family of the identical name, also of New Rochelle, N.Y., where Dick makes his home. He and Mrs. Spitz are now grandparents. Lizbeth was born to their daughter, Margot Schlesinger, in February, 1952. While we're on the subject of coincidences in names, there's another society note about Clark Lee, the writer who mentioned the late Lieutenant Fred Raymond of our Class in his earlier references to Corregidor. The current note says Mrs. Lee is a former Hawaiian princess and that the Lees have been visiting her brother and sister-in-law, the Harry Fields of Hawaii at the latter's villa near Florence, Italy! Then there's the report from our own son, who, meeting some fellow Pennsylvania students from Honolulu, asked if they knew Harry Field and was told that he had coached their football

team in Hawaii! Not in any way connected with the foregoing are the many news accounts of the leadership of Mrs. John G. Lee of Farmington, Conn., national president of the League of Women Voters and wife of our own John G. Lee of Tech Show fame. And Mrs. Sumner Hayward, President of the New Jersey Bergen County Simmons Club, was a delegate to the 50th anniversary celebration of Simmons College.

A. Abba Orlinger, counselor-at-law specializing in patents, trademarks, and copyrights, has removed his New York City offices to 24 West 40th Street. He also maintains a Philadelphia office at 6655 McCallum Street. Frederick E. Haeberle, a rear admiral, is on the staff of the Webb Institute of Naval Architecture, Glen Cove, N.Y. New addresses have been received for Albert J. Hanley, Wallace K. Spooner, Whitney H. Wetherell. Bob Miller, class photo-historian, winds up his story of the trip he and Helen made with Helier and Graciela Rodriguez to the latter's home in Havana, with: "The flight from Miami to Havana was interesting, giving us a beautiful view of Biscayne Bay and the gold coast of luxurious hotels and clubs. Havana is a city of contrasts between old and new. The city dates back over 300 years and has many narrow streets combined with examples of the old Spanish type of architecture. There are also wide boulevards and examples of the ultramodern in the newer sections of the city. The countryside, with the ever-present royal palms, the tropical vegetation, the native thatched huts, the vast sugar plantations — all excited our interest as we drove to the famous Varadero Beach, about 100 miles from the capital. Here is an ultramodern luxurious hotel, a section of beautiful sandy shore, and the most exquisitely crystal-clear water to be found anywhere. As Helier has suggested, Cuba would be an ideal location for a future holiday get-together of the Class." Bob is loud in his praise of the friendly hospitality which is characteristic of Helier and Graciela. He reports all six of the Miller contingent now in school, with the oldest daughter, Peggy, starting her college career at Catholic University to become a nurse.

Harold H. Lockey of Milford, Mass., has not been well. The Lockeyes have two daughters and a son. The older daughter is married and has a two year old son. Samuel E. Lunden is senior partner of the Los Angeles architectural firm of Lunden, Hayward and O'Connor. He is a fellow of the American Institute of Architects and a former national vice-president, a former president, director, vice-president, and treasurer of the Southern California chapter of the A.I.A., and a member of the American Hospital Association. Locally, he is a member of the Chamber of Commerce, the Town Hall, a former planning commissioner of the city of Manhattan Beach and onetime secretary of the South Bay Beach, and Highway Association. He is the author of *Community Development Through an Exposition for Los Angeles*, published by the Haynes Foundation. Sam says his leisure moments are devoted to deep-sea fishing and color movies. He and Mrs. Lunden have two

girls and a boy. Speaking of Los Angeles reminds us of Jack Benny's recent nationwide broadcast of a plug for Bekins Van Lines of that city. Jack Kendall of Pasadena is vice-president of the Bekins organization.

Max C. Goldberg, President, House of Proktol, Inc., Newark, N.J., manufacturer of hair dyes and cosmetics, died on November 16, 1952. Born in New Bedford, Mass., he was associated with us in Course VI during the World War I period. He started a hairdressing business in Newark 20 years ago and was a former treasurer of the Newark Hairdressers' Association and a member of the State Hairdressers' Association. He was also a member of Columbia Lodge No. 176, F. and A. M., and the M.I.T. Club of Northern New Jersey. He had served in the Students Army Training Corps at Technology. He leaves his wife, Mrs. Jerry Cohen Goldberg; his mother, Mrs. Rose Goldberg of Los Angeles; two sisters, Mrs. Jane R. Singer of Newark and Mrs. Carrie Efros of Los Angeles. On behalf of the Class, sincere sympathy is extended to his family.

Start the New Year right — write! — CAROLE A. CLARKE, Secretary, International Standard Trading Corporation, 22 Thames Street, New York 6, N.Y.

• 1922 •

Sorry no notes in the December Review. We used up all of my accumulated ammunition in the November issue.

Earl H. Eacker, President of the Boston Consolidated Gas Company, was elected vice-president of the American Gas Association at that organization's recent convention at Atlantic City. Buck is also a member of the Boston Chamber of Commerce and the Governor's Advisory Council for defense agencies of Massachusetts. He is a trustee of the Eliot Savings Bank in Boston and recently served as general chairman of the Boston Y.M.C.A. building fund.

Crawford H. Greenewalt, President of Du Pont, was awarded the Gold Medal of Merit Award given annually by the Wharton Alumni Society of the University of Pennsylvania for outstanding achievement in the business field. Previous recipients of this award were Charles E. Wilson, formerly President of General Motors and now Secretary of Defense, and Benjamin F. Fairless, President of United States Steel Corporation. The series of speeches Greenie has delivered over the past several years, pointing out how our freedoms have been gradually nibbled away on the plea of crisis or emergency, have attracted nationwide attention. In addition to the Wharton Award, the Chemical Industry Medal was also awarded to Greenewalt by the Society of Chemical Industry last October at the Waldorf-Astoria in New York. Other classmates who were witnesses at this happy occasion were Bill Bainbridge, Charlie Burke, George Dandrow, Clate Grover, Bob Hallock, Brod Haskell, Frank Kurtz, Dave Minton, Bill Mueser, Ray Rundlett, and Dale Spoor.

The September 8 issue of *Time* has, in its Business and Finance Section, an inspiring article about Paul Ryan's activities

with his U.S. Pipe Line Company which is building a new 24-inch pipe line from Beaumont to Newark.

W. L. Newhall has been made director of the Department of Research and Development of the Dravo Corporation, Pittsburgh. Arnold W. Milliken, Vice-president and General Manager of the New York State Electric and Gas Corporation, was honored last October by naming after him the company's new 500,000 kilowatt generating station now being built near Ithaca, N.Y. Milliken joined the company in 1939 as vice-president and eastern division manager, and the tribute comes to him, in the words of the board of directors, for his "long and faithful services, and his contributions to the success of the company."

Members of the Class are still active in connection with the activities of the Alumni Association, as can be seen from the following enumeration: Executive Committee, Theodore T. Miller; Alumni Term Member of the Corporation, Thomas H. West; On committees of the Association — Alumni Day, Theodore T. Miller; Audit and Budget, C. George Dandrow; Friends of the M. I. T. Library, Oscar H. Horovitz; Committee on Honorary Members, Parke D. Appel; Nominations for Alumni Council Representative of M.I.T. Clubs, A. Robert Tonon; Members at Large of the Council, Harold E. Koch and Whitworth Ferguson; Class Representative on the Alumni Council, Kenneth R. Sutherland; Council Representatives of M.I.T. Clubs, Parke D. Appel — Urbana, Robert H. Brown — Bridgeport, C. Yardley Chittick — Washington, Earl H. Eacker — Havana, Warrent T. Ferguson — Atlanta, Oscar H. Horovitz — Harrisburg, A. Robert Tonon — Cleveland, Karl L. Wildes — Schenectady. The Class, however, seems to be losing its grip in the matter of providing officers for the various M.I.T. clubs. There was a time when it seemed as if there was a member of the Class of '22 in the management of each club, but now we appear to have turned things over to the younger generation. We still have a few officers, however, to remind us of our former ascendancy: Bethlehem, Pa., President, Isidore Loss; Charleston, W. Va., Vice-president, William L. Hawes; Oslo, Norway, Secretary, Claus Molbach-Thellefsen; Philadelphia, Vice-president, C. Willis Stose; Richmond, Va., Secretary, John Skelton Williams, Jr.; Rochester, N.Y., Vice-president, Dwight Vandevate; Tokyo, Vice-president, Yoshinori Chatani; Washington, D.C., Secretary, Samuel H. Manian. The following are Alumni Representatives on Institute Departmental Visiting Committees: Mechanical Engineering, Horace W. McCurdy; Food Technology, Francis M. Kurtz.

Many members of the Class are devoting large amounts of their time acting as "Ambassadors of Technology" in their respective communities where they interview and assist prospective students and in other ways co-operate with the Administration of the Institute. These are: Denver, Charles E. Brokaw; Washington, D.C., William K. MacMahon and Robert K. Thulman; Atlanta, Ga., William E. Huger; Wichita, Kansas, Fred C. Koch;

Augusta, Maine, Willard B. Purinton; Fitchburg, Mass., Robert H. Brown; Cranford, N.J., William J. Grady; Morristown, N.J., Everett W. Vilet; Trenton, N.J., Thomas H. Gill; Buffalo, N.Y., Whitworth Ferguson; Elmira, N.Y., Thomas S. Craig; New York City, C. George Dandrow and William H. Mueser, Raymond C. Rundlett; Rochester, N.Y., Dwight Vandevate; Syracuse, N.Y., Edwin A. Gruppe; Hamilton, Ohio, Val Friedrich, Jr.; Philadelphia, Philip M. Alden and Charles W. Stose; Kingsport, Tenn., T. M. Taylor; Seattle, Wash., H. W. McCurdy; Bogota, Colombia, John O. Bower; Zurich, Switzerland, Werner Schoop.

Word has been received from the Alumni Office of the death of Melvin J. First of 5627 Primrose Avenue, Indianapolis, Ind., last September. If anyone can furnish further details, your Secretary would appreciate receiving them. We also have notice of the death of Robert J. Buckley, but no information as to the time or place. His last address appearing in the Alumni Register was Natick, Mass.

New Addresses: James L. Truslow, 429 Hale Street, Prides Crossing, Mass.; Commander Paul S. Johnson, Institute of the Aeronautical Sciences, 2 East 64th Street, New York City; Edward L. Ford, 14 Gould Street, Fall River, Mass.; Edwin C. Brown, 1216 Galena Boulevard, Aurora, Ill.; John F. Otis, 1732 Chicago Avenue, Evanston, Ill.; Lieutenant Colonel Harry H. Fisk, 1401 Ethel Terrace, Blackville, S.C.; Paul R. Stewart, Saw Mill Road, Boonton, N.J.; George R. Prout, General Electric Company, 1 River Road, Schenectady, N.Y.; Milton M. Manshel, 35 Beverly Road, West Orange, N.J. — C. YARDLEY CHITTICK, *Secretary*, 41 Tremont Street, Boston 8, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

I expect to start off each set of notes for the next few months by reminding you of the date of the 30th reunion, June 11-14, 1953, so that you will keep your calendar marked for this date. The place is the Sheldon House at Pine Orchard, Conn., near New Haven. Channing P. Clapp of 210 Main Street, Matawan, N.J., is chairman of the Reunion Committee and will be glad to have your ideas and assistance.

There will be mailings about the reunion to all members of the Class, and I hope you will respond to these as each indicates. On the basis of the first of the mailings, an even 200 members of the Class have been heard from. Their names, home addresses, and business connections are given in a summary which was sent out with the second mailing. As a result of these mailings, we should be able to bring up to date a list of the members of the Class, and I know you will be interested in seeing what is happening to those you knew well.

Brief vital statistics on the first 200 reporting include the number of children and grandchildren. Referring only to the 200 on the first returns listed, Paul Heymans of Brussels, Belgium, reports the

largest number of children, 10. Bernardo Elosua of Monterrey, N.L., Mexico, and J. S. Keenan of Toronto, Ontario, are runners up with seven. Among those reporting grandchildren, Harold S. Van Buren of Glendale, Ohio, and retired Admiral Charles David Williams, Jr., of Detroit, are tied with five each. Runners-up, with four each, are Lockwood Oliver of Hudson, Ohio, and Felipe Diaz-Ossa of Santiago, Chile. Franklin G. Clement of Lake Forest, Ill., reports twin grandchildren.

The Graduate Constitution of the Class has Article III which reads as follows: "Officers. Section 3. Election of officers by ballot shall be conducted at each quinquennial meeting of the class, or in an emergency by letter ballot, a reasonable period of time being allowed for the execution and return of such letter ballots. Prior to each quinquennial meeting the President shall appoint a Nominating Committee to offer a slate of officers for election at the meeting."

Acting in conformance with this provision, President Bob Shaw has appointed a Nominating Committee with Dr. Egon E. Kattwinkel, Chief of Medical Staff of the Newton-Wellesley Hospital, as chairman. Other members are Herbert L. Hayden, works engineer of Du Pont's plant at Arlington, N.J., A. Raymond Holden, who is with the International Shoe Company of Manchester, N.H., John Ely Burchard, Dean of Humanities and Social Studies of M.I.T., and Royal Sterling, President of the Cinder Products Corporation of Providence, R.I. This committee will report at the regular meeting of the Class which will be held during the 30th reunion.

C. Fred Smith, Jr., of 14 Harbor Avenue, Marblehead, has been elected a member of the Board of Directors of the Lynn Gas and Electric Company. — Edwin H. Schmitz, general sales manager of Standard-Knapp Corporation, was elected president of the Packaging Machinery Manufacturers Institute at its meeting at Hot Springs, W.Va., in October. The foregoing information was from the Middletown, Conn., *Press*, which mentions that Eddie is also a Republican candidate for the Common Council of that city.

The National Science Foundation, a government organization, announced in October a number of grants and contracts in the biological and physical sciences. One of these was to M.I.T., a two-year project in the amount of \$12,400. The principal scientist will be Professor Bertam E. Warren and the project will be devoted to the elastic spectrum of solids by the measurement of the temperature diffuse scattering of x-rays.

Also in October, Eger V. Murphree was named the 1953 recipient of the Industrial Research Institute Medal. The Industrial Research Institute was organized in 1938 under the auspices of the National Research Council. Its medal has been awarded annually since 1945 to honor outstanding leadership or management of industrial research. Dr. Murphree won this medal for his work as president of the Standard Oil Development Company, central research and engineering affiliate of the Standard Oil Company (New Jer-

sey). Since his appointment in 1947, he has guided his organization during a period of some of its most important discoveries. New refining processes, such as fluid catalytic cracking and fluid hydroforming, were brought into successful commercial operation in the petroleum industry. New products developed include specialized lubricating oils, petroleum chemicals, and Butyl synthetic rubber. — HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

• 1924 •

A telegram from New York stated: "After safari Europe am staying Biltmore Hotel New York stop planning visit Tech stop who is MIT Ambassador here"; signed, Dolph Santos. Called Johnnie Fitch and he jumped at the designation of Ambassador to the Brazilian Power King. That was a week ago, and Dolph hasn't shown up in Cambridge yet so the royal reception must be in high gear. News of our deep-six classmate, Chief Engineer Simonds: Ed Wininger reports that Barnacle Bill "swished in and lashed up" to his office recently. He was doing a two-month trick with the Navy in the New York district.

Blanchard Warren is now settled down on the West Coast. He's heading up Bird Machine Company's office in Portland, living just outside the city in Oswego. A clipping on the appointment of James F. Crist as new head of the Southern Association of Science and Industry (reported here last month) says that he is "executionally" well qualified. Is that good? Just after having clarified the name of Phil Bates's company for you, he pulls a switch and leaves. In October he became general manager of research for the Carnation Company. Seems that Carnation intends to broaden its field, go in for other products than just milk, and they're now building a big research center out in Van Nuys. Phil heads it up.

McGraw-Hill announces a new edition of *Electronic Measurements*, coauthored by a couple of Stanford faculty members: One of them, Frederick E. Terman, Dean of the School of Engineering. Since the first edition appeared in 1935, it seems obvious that this second edition must be essentially a brand new book. Lobby is just back from a swing through the Caribbean area. In Miami, he had a very pleasant get-together with Tom Mattson who is doing a bit of industrial engineering in that section. And although he didn't get to see J. Adalberto Roig, he learned that AI's interests have now expanded to include directorship in another Miami bank.

Professor Candelario Calor Mota is currently on leave of absence from the University of Puerto Rico and is planning a trip to Spain in the near future. And just back from Spain is Professor Martin J. Buerger, who went there at the invitation of the country's major scientific group to deliver a series of lectures on x-ray crystallography. Among his other scientific pursuits while there, a detailed investiga-

tion of the champagne industry. After 25 years of the leather business, George J. Harrington recently resigned the presidency of the Hunt-Rankin Company and shifted to electronics. He is now president of Electralab, Inc., in Cambridge; product, printed circuits.

No matter whether you were cheered or depressed by the recent elections, Ike's victory had one most unfortunate consequence. Gordon F. Hook, Chicago patent attorney who was with us at our 25th, suffered a heart attack while hunting last year in the Canadian woods. Since that time he had been on a very strict regimen, including an 8 o'clock retiring hour. Election night he stayed up late listening to the returns and became so excited he had another seizure from which he did not recover. Gordon's passing will be mourned by a great many who knew him years ago as the "Iron Man." His widow, parents, two sisters, and a brother survive. To them go the sympathy of the entire Class.

The widow of Fred T. Patton advises us of his passing last April. He was with us only a short while, and went on to Stanford from which he graduated in 1924. He had been chief engineer of the Colorado-Texas Refining Company in recent years in Colorado City, Texas.

These notes will reach you at the end of another year. The year ahead is, as always, an unknown quantity. One certainty is that it will be a time of change, starting on January 20. Let's hope that the changes will be the kind which many of us confidently expect and for which all of us devoutly hope, and that it will indeed be a Happy New Year for all. — HENRY B. KANE, *General Secretary*, Room 1-275, M.I.T., Cambridge 39, Mass.

• 1925 •

We will be into the year 1953 by the time you read these few notes, and Ave Stanton and your Secretary extend best wishes for the New Year to all members of the Class.

Your Secretary requests that you make and keep a New Year's resolution: Namely, write at least one letter during the coming year to the Secretary so that he will not be faced with the situation confronting him today of trying to keep 1925 in the class notes with no news to report. Facing this situation, I called Ave Stanton who informs me that Mr. and Mrs. Wally Westland are proud grandparents. Brenda Elizabeth Nye, daughter of Elizabeth Westland Nye and Joseph B. Nye, arrived on October 12, 1952.

Ave Stanton informs me that there will be a class Standing Committee meeting arranged early in 1953, and any ideas from members of the Class concerning class activities will be gratefully received. Even if you have gripes we will be glad to consider them.

Your class agent for the Alumni Fund, Fred Greer, tells me that during the past year our contributions to the Alumni Fund have shown some improvement. If the same percentage income can be maintained during the new year, we should begin to get the Class of 1925 up to the place it should occupy in the Alumni Fund records. — F. LEROY Fos-

TER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

• 1926 •

These January notes were supposed to have been written last week end at Pigeon Cove but, instead of being there, your Secretary was in Winchester lying in bed looking at the ceiling nursing a damnable cold. Next week end will be too late, so for the first time we are doing a Wednesday evening job. If the ink doesn't seem to flow quite as freely as usual it's because the atmosphere lacks the swishing of the waves on the rocks below. However, there is a good quantity of "stuff" this month, so there's no need for the usual Smith malarkey. Why not get down to business? The clippings first: Cyril Stanley Smith has been awarded the Francis J. Clamer Medal by the Franklin Institute of the state of Pennsylvania for his metallurgical contribution to the development of atomic energy. Cyril is professor of metallurgy and director of the Institute for the Study of Metals at the University of Chicago. The article is lengthy — mentions plutonium, Manhattan Project, Los Alamos, fission — all formidable sounding words to the rest of us. Congratulations, Cyril, for receiving this honor in a field that is over the heads of most of us.

Another clipping tells of the elevation of Allan W. Lundstrum to the presidency of the Ohio Fuel Gas Company. Congratulations to you, too, Allan, for this well-deserved appointment. It's a little early in the notes to ask for time out, but we had a delicious roast of beef for dinner this evening and I know that it's cooling in the kitchen — 'scuse just a minute. Hmmm, that rare sliver was g-o-o-d. Recently, we attended the Rubber Chemicals meeting in Buffalo and advised a couple of classmates that we were coming. Don Welch was able to get down to the Statler for a short, but greatly appreciated, visit. Don is general sales manager for the R. P. Adams Company, Inc., and is also secretary of the company. They manufacture filters and heat exchangers, but the filters were what interested me. The filtering element is a porous, vitreous material which means that very hot and very corrosive materials can be filtered — it fires the imagination, they must be fun to sell. Don has two young daughters and they did a bit of sailing together last summer. I did what I could to sell Don further on the sport. *Lightnings* are very popular in this area, according to Don.

We have just received another thumb-nail sketch from one of our loyal classmates, so we will have to dig up the numbers again. No. 38 — RUSSELL, WINSLOW H. — Win now lives at 10 Delmar Avenue, Glen Rock, N.J., and is superintendent, test facilities engineering, Wright Aeronautical Division, Curtis Wright Corporation, Woodbridge, N.J. Win has three sons aged 19, 18, and 11. During Win's first six years after graduation, he spent a great deal of his time in sales, selling miscellaneous things from groceries to tools. From then on, Win has been strictly an engineer and, except for a short turn with North American Philips

Company and one as chief engineer of Pabst Brewing, he has been in the aircraft industry — Pratt and Whitney, Ranger Aircraft Engines, Packard Motors, and now, as we have noted above, he is with Wright Aeronautical. A very interesting engineering career and a very interesting guy — and a good-looking one too!

Now — after another wee interlude, not for roast beef this time but for a 15-minute peek at Arthur Godfrey's show, we will continue with another biography. This biography was actually written to your Secretary as a letter in answer to one of those notes: "What have you been doing out there in St. Paul, Bob?"

No. 39 — MATTSON, ROBERT E. — The letterhead is that of the Northern Pacific Railway Company, Transportation Department, St. Paul 1, Minn. Up in the left-hand corner it says: R. E. Mattson, General Superintendent of Transportation. Since a railroad devotes quite a bit of its activity to transportation, this job of Bob's sounds rather essential. Let's quote now from his letter: "My life has been uneventful since leaving M.I.T. — started immediately in the Operating Department of the Northern Pacific Railway and I am still with them. Lived in 10 different towns between the Twin Cities and West Coast the first 15 years, then three and one-half years in the Military Railway Service, mostly overseas — Iran, Philippines, and Japan. Got out of the Army and resumed with the railroad at the beginning of 1946 and have been in the general office since. A recent interlude was a six-month leave of absence the first half of this year while I resided in Dublin as consultant to the government railway of Ireland, during which time I made a number of short visits to the British Isles and the Continent. Family status: still a bachelor. The only '26 man I have seen in years is Bud Wilbur on a short business trip I made to Boston a year ago. This part of the country is off the beaten track and I seldom see any M.I.T. men except the local residents. An exception is Lobdell '17 who is my principal contact with the Institute. And that's about it!" I love Bob's modest remarks — "My life has been uneventful since leaving M.I.T." It sounds like a mighty thrilling, interesting, and successful career to me, and the Class will certainly be pleased to hear from you. You had better plan right now, Bob, to attend our 30th in 1956 and get reacquainted.

Well that about does it for January except for one important announcement — Esther Frutkoff has agreed to round up some information about the coeds from time to time. Therefore, will any of our coeds who read these notes please drop a note to Esther at 162 Glenway Street, Dorchester, Mass., and tell her what you have been doing over the years. Also, any of the rest of you who want to know what has happened to your favorite coed can do so by writing to Esther — she will dig up the story and we will publish it. Next month we will have an important announcement to make about our 30th reunion. We will give you the time, the place (George Edmonds: Here's a tip — You will like the place), and we will also

announce the name of the able classmate who has accepted the chairmanship of the reunion. It sounds a long time off (1956), but '26 reunions are mighty important affairs and it's really not too soon to start thinking about it. So saying, until February, your faithful correspondent — GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston, Mass.

• 1927 •

It is with deep regret that we record the death of Joseph Howard Gaylord, Jr., who died with his son late in October in a boating accident 30 miles south of Lafayette, La. The boy, John Allan Gaylord, eight, fell from his father's boat as they were on a pleasure cruise along the Vermillion River. The father jumped into the water in an effort to save his son, had him in his arms, and was reaching for a line that had been thrown him, when both sank. Gaylord's career had been in construction work. He was assistant director for development for the Federal Public Housing Authority during the war, and later planned and built housing projects and slum-clearing projects in the south.

Charles Kingsley, Jr., '27, and Arthur E. Fitzgerald '31 are the authors of *Electric Machinery*, published this year by McGraw-Hill Publishing Company, Inc. Kingsley returned to M.I.T. as a research assistant in 1928 and is now associate professor of Electrical Engineering.

Anthony Thormin was recently elevated to the presidency of the Board of Building and Safety Commissioners of the city of Los Angeles. He has been in practice in Los Angeles since 1937 and has served as a member of the board for four years. He is staff architect of the Children's Hospital and has designed many public buildings in Los Angeles. — JOSEPH S. HARRIS, *General Secretary*, Aviation Department, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

• 1930 •

Your class officers join in extending best wishes for the New Year to you all! In two short years, you will be receiving communications concerning a 25-year reunion and we hope that husbands and wives who read these notes will start saving now for that big event. Last June, the Class of 1927 had a fine reunion at Oyster Harbors Club in Osterville on Cape Cod. This year the Class of 1928 plans to hold a reunion "on campus" in Cambridge. Hermon Scott, our class representative on the Institute's continuing 25-Year Reunion Committee, is making tentative reservations "both ways" for the week end preceding Alumni Day of 1955.

We have the sad duty of reporting three very untimely deaths affecting our Class. Last July, Mrs. David T. Houston of Short Hills, N.J., passed away, leaving Tul and their two children, aged seven and five. The Houstons had been married for 10 years. In August, William J. Larkin, Jr., of Lynnfield Center, Mass., died. He was survived by his wife and a son who is a naval aviator. Bill was vice-president of the National Company, Inc.,

and had been in their employ for 20 years. Lawrence P. Abare, assistant plant manager for First National Stores warehouse in Somerville, Mass., passed away in September while vacationing on Prince Edward Island. He joined the First National organization as chief chemist in 1932. To Tul Houston and the families of our two classmates, we express deepest sympathy.

George Nakashima of New Hope, Pa., who designs and makes distinctive furniture, won the Craftmanship Medal of the American Institute of Architects at their 84th annual convention in New York last summer. Elmer Bjurling is now executive vice-president of the Improved Paper Machinery Corporation, of Nashua, N.H. He was elected a vice-president of that company in 1946. Larry Gonzalez is in France as a staff member of the U.S. Navy Shipbuilding Liaison Office. In Korea, Bob Foster is serving as a lieutenant colonel and an assistant inspector general. His wife and son make their home in Fort Bliss, Texas.

Steve Prendergast has been transferred by Western Electric from Haverhill, Mass., to Kearny, N.J., where he is assistant superintendent in the labor relations department. The record vote in the Greater Boston area in the recent elections was due in part to the work of Bob Reynolds, who headed the drive to get voters to the polls in a nonpartisan effort of the Advertising Club of Boston, where Bob is an executive of the Sutherland-Abbott Agency. Your Secretary missed out on John De Lorenzo's free turkey dinner for all M.I.T. graduates last October at his farm in Duxbury, Mass., where he raises turkeys by the thousands. We hope that John repeats his offer and that we learn of it in time to attend. Please send letters or notes for this column to — PARKER H. STARRATT, *Secretary*, 1 Bradley Park Drive, Hingham, Mass. *Assistant Secretaries*: ROBERT M. NELSON, 2446 Iroquois Road, Wilmette, Ill.; ROBERT A. POISSON, 150 East 73 Street, New York 21, N.Y.

• 1932 •

I find we have an envoy in Japan. Al Dunning, who has been with Monsanto Chemical for a number of years, has taken over as vice-president of their new operation, Monsanto-Kasei, Tokyo, Japan. He lives with his wife, Lois Thompson, and their three children at 10 Asahidai, Negishi, Naka-Ku, Yokohama, Japan. Al has got into civic things in a big way, listing the M.I.T. Club of Tokyo, American Chemical Society, American Club and American Chamber of Commerce, Tokyo, and Colonial Club of Yokohama. He is doubtless well versed in local lore by now, if any of our classmates have the good fortune to travel to Japan. As many of you may know, Al was a commander, U.S.N.R. (aviation), in World War II. I saw a good bit of Al before he left Monsanto and it is a pleasure to report a fine and enthusiastic class representative for us in Nippon. Al, let us hear from you if you run into any of our classmates.

Another pioneer is Frederic C. Alexander. Ted moved to Albuquerque,

N.M., three years ago to be division supervisor, production and engineering methods, of the Sandia Corporation, which is concerned with atomic weapons. He lives at 339 North Washington, Albuquerque, with his wife, Dorothy Owen, whom he married in 1940. They have two boys, John L., 10, and Robert O., six. He reports wonderful living, climate, scenery, and people, with much opportunity for his many hobbies, which include photography, fishing, archeology, scouting, travel, and church work.

Bennett Archambault is another one of our classmates who is doing big things. Ben is vice-president and general manager of the M. W. Kellogg Company, petroleum refinery engineers. We had hoped to see him at reunion, but know from association that M. W. Kellogg is a busy shop. During World War II, he was head of London Mission, Office of Scientific Research and Development. He indicates that he finds enough time for golf to shoot a pretty good score. Ben lives with his wife, Margaret Morgan, at 1120 Park Avenue, New York City. They have two children, Suzanne Morgan and Michele Lorraine. Minot R. Bridgman is ahead of most of us, with a son, Robert G., entering M.I.T. in 1953. Congratulations, Bridge! Probably his other boy, Richard L., will follow along too. Bridge lives at 12 Byron Avenue, White Plains, N.Y. He is a senior procedure analyst for Metropolitan Life Insurance Company. During the war he served as lieutenant colonel in the Army.

Frank S. Chaplin is another performer for us. Chap is associate director for mechanical engineering at Franklin Institute and was in charge of the mechanical engineering laboratories while the Army's top-secret "Big Bertha" was being developed. The gun, a 280-millimeter cannon, was born and developed on the drawing boards of Franklin Institute's Mechanical Engineering Department. Actually, work was started at the request of the Army back in 1944, with George S. Hoell head of the laboratories; but the big secret was not revealed until this September. Hoell retired in 1949 and Frank took over. Congratulations, Frank! Frank joined Franklin Institute staff in 1945. Prior to that, he was principal engineer and head ordnance engineer for the artillery development office of the Army chief of ordnance. He and his wife and four children live at 822 Glendalough Road, Philadelphia 18, Pa.

Rolf Eliassen, our Assistant Secretary, is professor of Sanitary Engineering at M.I.T. That should certainly provide a good influence for the Class! He reports two boys, Tim, nine, and Jim, six. With his wife, Mary Hulick, they all live at 15 Hillside Avenue, Winchester, Mass. Rolf was also in the war as lieutenant colonel, Army Engineers. We really have quite a distinguished service record.

Stuart R. Fleming provides another M.I.T. prospect, his oldest daughter, due for the Class of '61. Stu is a construction engineer with Ford, Bacon and Davis, and lives with his wife, Alice J. Glannan, and their two daughters, Isabel Ann, 12, and Patricia Anne, 10, at 7 Jones Place, West Orange, N.J. Stu is active in the

M.I.T. Club of Northern New Jersey, and rounds out his life with sailing, baseball and music for hobbies.

More pedagogy in Bernard S. Gould. Barney is associate professor of biochemistry at M.I.T. He married Sophie Ginzberg, M.I.T. Class of '36, and with their three boys, Michael, nine, and David and Jonathan, seven, they live at 25 Cotswold Road, Brookline, Mass. Having twins of just about the same age, I am sure there is plenty of activity around the Gould house, which no doubt interferes with Barney's hobbies of cabinetwork and crafts.

James M. Shackelford is probably feeling better with the election. He has been very much interested in reorganization of the Federal Government and I am sure is counting on Ike to do big things. Perhaps we will see his name in the national papers. He is budget manager of Johns-Manville and lives with his wife and daughter, Laurel, five, at 25 Clinton Place, Metuchen, N.J.

We mentioned Bob Thompson in November, but must report his paper entitled, "A New Application of Fluidization," which he presented recently before the national meeting of the American Institute of Chemical Engineers in Chicago at the Palmer House. Although you might think that the subject material described the activities of Worcester and Welch at the reunion, it really covered the description of a new way of processing pulp to make paper. — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Merideth Drive, Cranston, R.I., ROLF ELIASSEN, Room 1-153, M.I.T., Cambridge 39, Mass.

• 1937 •

Jerry Salvy has been doing a monumental job of getting the ball rolling, and we all look forward to more interesting news of the doings of all you good people. The first bit of news came from Al Roshkind, living in Chicago: "I was delighted to get your class letter this week, even though it had to be a mimeographed epistle. Was kind of surprised that you finally got roped into class politics. I guess that's one of the advantages of living this far from Boston. As you probably know, I paid my deposit and Pat and I were all set to come to the 15th reunion out at Weekapaug, but I got tied up in much serious and urgent business before the fateful date arrived and we couldn't make it. From the sound of things, we certainly missed a good time. Pat and I and our two children, Kathy and Tommy, aged seven and five, respectively, live in a big old house in the village of Glenview, just a few miles north of our plant, and have taken up the existence of typical suburbanites. On my infrequent trips to the East, I somehow never seem to find much time to do more than turn around and come back. We will certainly bear in mind your kind invitation to get together in the East next time we get the chance."

Another very interesting letter came from Mortimer Nickerson: "The Eagle of Egbert Hill, Jerry Salvy, is holding a loaded gun aimed at my head, figuratively speaking, and I've got a hunch if I

don't get this letter off to you for the class notes the gun may go off, literally speaking, the next time I see him. Guess when we gave Jerry the title of BTO at Weekapaug, we did the right thing. If his system doesn't result in some substantial literary contributions, nothing will ever shake us out of our lethargy. I hereby christen him 'H-Bomb Jerry'.

"I think the last time I wrote for the class notes was in 1940, so that makes me a veteran. At that time I was working for Carbide and Carbon Chemicals in West Virginia. I got a late start on most of you fellows, having stayed on at the 'factory' for three years to get my Ph.D. in Chemistry. Hope you Southerners will pardon, but despite pleasant relations with my company, I decided West Virginia was no place for me and I came back to Cambridge in the summer of '41 to work for the Dewey and Almy Chemical Company. Came the spring of '42 and the Army reminded me that, having taken advanced ROTC, I was cordially invited to pin on my gold bars and join the party. This I did, but somehow our personalities didn't quite mesh and for a time our relationship was rather strained. They wanted to teach me chemistry and I felt that they were the ones who needed an education. Needless to say, I was most happy to hear in late '45 that, someone else having won the war, I could go back into civvies.

"From then to the present, I have been chief chemist at DeBell and Richardson, Inc. (I can hear the chorus now, 'Who the Hell are they'). Well, we're consultants in the field of plastics and probably only those who are active in the technical aspects of this field have heard about us. We're quite anonymous, and, in many respects, have to be. The prospector for gold or oil doesn't have a publicity staff, and, by the same token, when a client engages us to go prospecting for new plastics developments we don't shout it from the hilltops. If we do strike pay dirt, and we often do, the client takes over from there and it is his name you will see on a new nationally advertised product. You'll have to go to the patent file to find us. Not much glory but we eat regularly — and well — and there's never a dull moment. Incidentally, J. M. DeBell is M.I.T. '17.

"Add a loud 'me too' to all the words of praise I'm sure you've gotten on the 15th reunion at Weekapaug. I sure had a grand time and wouldn't have missed it for anything. After hearing my glowing description of it, perhaps my wife will come to the next one. Add vital statistics: Besides my wife, Lucille, I also have a daughter, Gail, aged nine, and a son, Craig, aged five and one-half. Both redheads, naturally. Having one of each species, we have decided that any more would be repetitious. Gotta save a little something for the next time this guy Salvy comes around so will sign off here. Best regards to you and all the gang." Thanks Nick; it was swell seeing you again!

A few interesting notes from here and there — some new and some from clippings. At the reunion, we all got a chance to meet Abby Faatz. She and Al were

our newlyweds, having been married in Montclair, N.J., on April 19. Al is the president of the M.I.T. Club of Northern New Jersey and is with Foster-Wheeler Corporation. Also at the reunion was Horace Van Dorn who is president of the Technology Club in Hartford, Conn. As I recall, he is in charge of experiment and development at the Fafnir Bearing Company in Hartford. Roy Smith was telling us some of his political activities in Wilton, N.H., where they were trying to get their nominee on the ballot. Roy is plant engineer at the Hillsborough Mills of Wilton. How did Gregg make out, Roy? Ed Bartholomew received his doctor of science degree at the Institute in June and is now assistant professor of mechanical engineering at the University of Connecticut. J. R. Bourke was elected president of the East Hartford, Conn., Exchange Club in July. Robert Vogeler has been giving lectures in several parts of the country. As a matter of fact, he talked in a neighboring town, South Plainfield, N.J., some time in October, and we see by the paper that he was in Cincinnati for a talk at the Queen City Club on October 16.

Also, at the reunion, we all talked with Mary Metcalf and heard from her some of the things she has been doing, including the raising of a family of five children. I have a clipping from the *Boston Globe* of July 31, 1952, showing a picture of Mary and her family. There was also a very wonderful article about her work in engineering and law. Yes, that's right. She holds a law degree from Boston University and is a member of the American Bar Association and the American Patent Law Association, the Massachusetts Bar Association, and the National Association of Women Lawyers. All this in addition to her membership in the National Society of Professional Engineers. She is an associate of Thompson and Thompson, well-known patent attorneys in Boston.

Daniel Tower has been appointed curator for the Old Slater Mill in Pawtucket, R.I., and his duties will be to develop a museum within the mill. Arthur York has been promoted to the position of assistant director of public relations of the U.S. Rubber Company in New York. Paul Drouilhet, who is a captain in the Navy, has a very interesting and oftentimes exciting assignment in being in charge of the Navy Hurricane Weather Central in Miami, Fla., better known as the "hurricane hunters." Robert S. Bush, who is with Pan American World Airways in Miami, Fla., has been elected president of the P.A.A. Management Club. Walter Kozak has been made general foreman of the meter finishing section at the West Lynn (Mass.) Works of the General Electric Company. Gordon Wilkes was instrumental in the development of a new process in the fabrication of stator blades of jet compressors. He is also with General Electric Company, but in the Thompson Laboratory of the River Works in Lynn, Mass. Al Schroeder has developed a single-neck tricolor TV tube. He is with the R.C.A. Laboratories Division at Princeton, N.J.

Gregory Villaflor, who is a major in the Army, graduated from the General Staff

Course at the Command and General Staff College, Fort Leavenworth, Kansas, in May and he is now serving as chemical officer at Camp Kilmer, N.J. Ray Rossman has been appointed executive assistant to the vice-president and general sales manager of the Godfrey L. Cabot Company in Boston, the world's largest producer of carbon black.

We have received the final list of the '37 attendance at Alumni Day, June 9: H. Berkey Bishop, Ralph B. Chapin, Leo R. Dantona, George S. DeArment, Charles M. Dierksmier, Cleon C. Dodge, Thomas L. Hallenbeck, Josiah S. Heal, Richard C. Karch, Raymond H. McFee, Mortimer H. Nickerson, John B. Nugent, Philip H. Peters, S. Curtis Powell, Melvin A. Frohl, George A. Randall, Robert P. Rudy, Walter H. Sherry, Norman G. Tompkins, Robert A. Vogeler, Walter S. Wojtczak, and H. Arthur Zimmerman.

Jack Robbins has been put in charge of something or other at the Calco Chemical Company. We should know because we get together for bridge or poker quite frequently. I'll try and remember to ask him next time and pass the word along. See you next time. — WINTHROP A. JOHNS, *Secretary*, 34 Mali Drive, North Plainfield, N.J.

• 1938 •

This month we have a wedding to announce—that of Jane Fountain Waggoner to Adam Gambel. The Gambels were married in Louisiana last September. Several members of the Class are in the news for their accomplishments. Harold Acker was a coauthor of a paper, "Research Under the Ship Structure Committee," presented at the annual meeting of the Society of Naval Architects and Marine Engineers in New York, November 12-15. Harold is in charge of hull research at Bethlehem's Fore River Shipyard. Louis Sherman has been appointed by Ethyl Corporation to the post of associate director of product development in charge of industrial chemicals. Before joining the Ethyl Corporation, he was associated with the American Cyanamid Company and its subsidiary, Chemical Construction Company. Robert Douglas, President of Godscroft Industries and Specialoid, Inc., has been appointed as one of the five trustees of the newly established Tool Engineering Research Foundation. Sponsored by the American Society of Tool Engineers, the foundation was organized to conduct scientific research projects in the fields of manufacturing, manufacturing processes, and allied tool engineering subjects. On October 30, John Doremus, 4th, addressed the St. Louis section of the Institute of Radio Engineers, having "Transistors" for the subject of his speech.

Don Severance has been busy encouraging attendance at the reunion, which will be June 13 and 14 at the Curtis Hotel in Lenox, Mass., 140 miles from both Boston and New York. By the time you receive this news, we expect to know of at least 30 couples planning to come, and the first publicity has not been released at this writing. Don has received a few replies. Paul DesJardins writes: "I have orders releasing me from active duty in

the Navy on March 15, 1953. As long as nothing happens to change them between now and then, and as long as our present outlook of locating in the upper New Jersey area upon again becoming a civilian does not change, we feel we can manage to get to the reunion. Since leaving Technology, I have spent all my time with the Worthington Corporation, except for those periods covered by Navy service. I expect to go back to Worthington in March and at the present it appears as though I will be located at our general offices at Harrison, N.J."

From Bill Whitmore: "Unfortunately, I am currently scheduled for an overseas field assignment for next summer which will prevent my attendance. Conceivably, the international situation could improve enough so that my trip will be canceled, in which case I should be strongly tempted to attend the reunion. But as it stands now, I'll have to decline. Too bad; it should be a grand party." A letter from Don Barnaby states: "We have just started building a new home and I am doing the general contracting. This project will certainly keep me busy in my spare time all through the winter. We hope to have it completed by next April or May. My job here at Kyle Products Plant (Milwaukee) has kept me more than busy the last seven months. We have had a very heavy program of putting new products into production this year and look forward to continued high production well into 1953." And Harry Saunders writes: "You probably noticed that I have a new address in New Jersey, having left Chicago, and one of the advantages of the move will be the opportunity to get back to M.I.T. on a few occasions. Until recently, I had not been on the East Coast since graduation. I am definitely counting on next June 13 and am ready to sign up any time. You might also be interested in some news from the family. As of October 31, we are celebrating our third child, an eight-pound, five-ounce daughter. We seem to be moving eastward, since the first was born in California, the second in Illinois, and now the third in New Jersey." — ALBERT O. WILSON, JR., *General Secretary*, 24 Bennington Road, Lexington 73, Mass. *Assistant Secretaries*: DAVID E. ACKER, 210 Woburn Street, Lexington 73, Mass.; FREDERICK J. KOLB, JR., 211 Oak Ridge Drive, Rochester 12, N.Y.; RICHARD MUTH, 116 West 67th Terrace, Kansas City, Mo.

• 1940 •

Frank Penn and June Margaret Craver were wed on September 27. Several of our members have joined the ranks of authors in the past few months. Francis Hildebrand has had published by Prentice Hall, Inc., *Methods of Applied Mathematics*, and Amos J. Shaler is co-author, with Professor Wulff and Howard Taylor, 2-46, of *Metallurgy for Engineers* published by John Wiley and Sons, Inc.

Jack Schaum is codeveloper of a simplified system of cylindrical core boxes at the National Bureau of Standards. The core boxes are of use in many types of foundry castings which contain cylindrical holes. Jack, at present, is a metallurgist in the bureau's chemical metallurgy

section. Previously he was an assistant chemist and assistant metallurgist at the Lewis Foundry and Machine Company, a research metallurgist at Babcock and Wilcox Company, a mineral economist at the Bureau of Mines, and a metallurgist at the Naval Research Laboratory. Jack has done graduate work at the University of Maryland and at the Department of Agriculture Graduate School. He is a member of the Test Bar Committee of American Foundrymen's Society.

Colonel Oliver G. Haywood, Jr., who received his doctorate with us, recently gave a series of three lectures to graduate students and faculty members at Johns Hopkins University on how military doctrine can be expressed in mathematical language. The lectures were on the Von Neumann theory of games and its correlation with military doctrine of decision. language. The lectures were on the Von Neumann of the Institute of Advanced Study, Princeton, was the first mathematical approach to the problem of making decisions in a conflict in which the outcome is determined, at least in part, by the rational actions of the contestants. It is possible that this theory, as a mathematical device for analyzing the outcome of conflict, may furnish a tool of value to military commanders in arriving at decisions concerning course of action or strategy.

Recently I was informed of the death of Richard Mann Magoun, son of Professor Magoun '18. I am sure that all the members of '40 join me in extending deepest sympathy to Maggie, our beloved teacher and friend.

The time has come once again to contribute to the M.I.T. Alumni Fund. Let's all chip in to make the '40 donation one to be proud of. If you like to read this column don't forget to write to—ALVIN GUTTAG, *General Secretary*, 7114 Marion Lane, Bethesda 14, Md. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941 •

By the time this gets into print, a New Year will have begun: I hope it will prove to be a pleasant and prosperous one for all of you. As a suggestion for a good resolution, if you haven't already done so, why not answer Reid Weedon's very original plea for contributions to the Alumni Fund? Granted, we are all asked to support a number of various causes, but few are as worthy or give as much satisfaction as this one. It's our school—let's back it!

Other news this month is mighty slim, and appears to be rapidly approaching zero as a limit. Professor Backer is exchanging posts this academic year with R. D. Tyler, lecturer in mechanical engineering at the Imperial College of Science and Technology in London. Stan and Esther are living at 14 Mayfield Road, London S.W. 19, and they plan to return in September. Jerome Namias wrote an article on "The Jet Stream" for the October, 1952, issue of *Scientific American*, in which he discussed the phenomena of extremely high speed currents of air found in the upper regions of the

atmosphere. Our congratulations go to Basil Staros, who was married to Jeanette Beatrice Roberts on October 5 at the Roslyn Country Club, Roslyn, Long Island, N.Y. Mrs. Staros attended Brooklyn College, and served during the war as a first lieutenant in the Women's Army Corps. Since graduation, Basil, who was a lieutenant in the Navy, has received a master's degree and a professional degree in aeronautical sciences from Cal Tech; he is presently with the Sperry Gyroscope Company. Best wishes to you both.

Another big bundle of address changes has arrived: William H. Baade, 260 North Fifth Street, Manville, N.J.; Amelio M. D'Arcangelo, Pte Quintana 2868, Martinez, Buenos Aires, Argentina; Ralph B. Delano, Manchester Heights, Poughkeepsie, N.Y.; Henry J. Ebrey, 106 South Lansdowne Avenue, Lansdowne, Pa.; Donald R. Erb, 60 Autumn Street, Malden 48, Mass.; Lieutenant Colonel Joseph O. Fletcher, Twin Oaks Road, Linthicum Heights, Md.; Sigmund Fritz, 210 Westgate West, Cambridge 39, Mass.; Lester W. Gott, 18 Samoset Avenue, North Haven, Conn.; Knut J. Johnson, R.D. No. 2, Parker, Pa.; Commander Camille J. Kosztyla, C.O.M., Box 8, U. S. Naval Station, Green Cove Springs, Fla.; Kermit Latin, Apartment C, 3815 Oakford Avenue, Baltimore 15, Md.; James W. Mar, R.D. No. 1, Concord, Mass.; Lyle M. Richardson, 332 Franklin Street, Wrentham, Mass.; Roger E. Robertson, 39 Shore Avenue, Quincy 69, Mass.; Donald D. Scarff, 1035 Hudson Street, Memphis, Tenn.; David L. Shapiro, 133-24-225th Street, Springfield Gardens, N.Y.; Carl W. Streed, 32 West Barber Avenue, Woodbury, N.J.; Segundo E. Vallejo, Juan B. Alberdi 1555, Buenos Aires, Argentina; Major Teddy F. Walkowicz, Room 5600, 30 Rockefeller Plaza, New York 20, N.Y.; Gifford E. White, 5355 Vanalden Avenue, Tazana, Calif.

Fellows, a story lurks behind most, if not all, of these changes: a new job, a new company, perhaps an entire new setup. The news is of interest to us all. How about a short note on yourself? The column needs some personal touches: Here's your chance to bring us up to date on your doings—IVOR W. COLLINS, JR., *General Secretary*, 28 Sherman Road, Greenwood, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1942 •

The Christmas season brings greetings and best wishes to all of you for a very happy and prosperous New Year.

News this month comes from all directions: West—Jack Arend is back from Okinawa. South—Filo Turner sends in a long letter via Vice-president Charlie Speas. East—Ken Rosett has been doing lots more sight-seeing in western Europe. North—Ed Thode, now of the University of Maine, has published the results of extensive research on "Dye Adsorption on Wood Pulp." Up—John Senior is busy with helicopters.

Jack writes that he is very happy to be home after a long session with the Air Force in the Korean theater. He missed

our 10th reunion but from now on: "I plan on being around every fifth reunion." Filo had hoped to be with us at the Hotel Griswold last June but sudden illness in the family kept him in Pensacola. In response to our query for news and statistics he writes: "I haven't done so much since getting out of Tech, but it has been fun. Nope, not married yet either. Right off the bat in '42 the Navy claimed me and I went to work at Philadelphia in the naval aircraft factory. Went through the various stages, finally wound up there as an assistant project engineer on aircraft engine development and testing. Then to sea as an engineering officer with a Navy air group. Got shanghaied out at Pearl and served on an aircraft carrier CVL-27 as division officer and later assistant air officer. After 22 months combat, came home, was assigned to Naval Air Test Center, Patuxent River. Stayed there a year and a half working with high-speed aircraft, then left the Navy in 1947.

"After that I took a good long vacation in Bermuda and the Caribbean but finally realized that one has to earn a living sooner or later, so went to work. Shortly after taking a job, my father offered me a proposition in the automobile business that was too tempting so now I'm vice-president of the Pensacola Buggy Works. We sell and service Chevrolet automobiles. Just recently, though, I got into the consulting business as a side line, and, while it isn't such high-priced engineering, it's a lot of fun. This area is going through quite a boom right now and there is a considerable demand for most anybody who can work a problem through and who knows the ropes locally. So there you have it. Pretty much routine except that the Navy did let me travel a good deal and I have been keeping that up. But, I don't think I would trade places with you fellows up there in the frozen North; four years was enough. Right now it's about 72 degrees outside and mighty pretty."

Ed received his Sc.D. in Chemical Engineering at Technology and then joined the University of Maine faculty. He is now an associate professor of chemical engineering and published his recent work in the *TAPPI* magazine (Technical Association of the Pulp and Paper Industry). In summation he says: "While this work is strictly what is referred to as fundamental research, our results so far have definitely shown that dye adsorption is directly related to the strength properties of finished paper. We hope that our future work will yield information concerning the properties of fiber surfaces that will be of use to the industry in controlling paper quality."

The aviation editor of the Boston *Traveler* bemoans the fact that the Hub City is doing nothing about in-town helicopter terminal facilities. By way of comparison, he points to the very effective work being done in the New York area by our own John L. Senior. John has organized the New York Airways and is now operating local mail and parcel post routes. Passenger service is due in the not-too-distant future.

Also in the mail is a colorful post card from our Technology Club of New York stalwarts. Although postmarked midnight after (?) the Club's annual smoker at the

Jacob Ruppert Brewery, the signatures show no sign of overimbibing by Bob Greenes, Zumi Kram, Pete Hellige, Ade Marcuse, Frank Seeley, and Joe Tankoos '43. They report "plenty of beer and Lobby too."

Wedding bells will be ringing soon for George B. Harris, Jr., and Anne Frances Speelman of Cumberland, Md. George is now on the staff of the Lincoln Lab at Tech.

A check on the class survey of last June, taken before the national nominating conventions, shows that an overwhelming number of our classmates had their ears tuned to the political ground swell. Over 70 per cent selected Dwight Eisenhower as their choice for president and ventured the shrewd prediction that he would be elected.

Address changes of the month: Eugene J. Aubert has moved to Englewood, N.J.; William W. Kellogg to Seattle, Wash.; Douglas V. Kelly to Lafayette, Calif.; Donald H. Kern has been promoted to lieutenant commander and is now at Hampton Falls, N.H.; Captain Ismael Nunez has moved to Buenos Aires, Argentina; Edward H. Rehnborg to San Gabriel, Calif.; Trent S. Russell to Castleton, N.Y.; Raymond W. Shrewsbury to Upper Arlington, Ohio; Richard B. Small to Winchester, Mass.; Joseph J. Vove to Menlo Park, Calif.; and Harry P. Wood to Aiken, S.C. — LOUIS ROSENBLUM, *Secretary*, Polaroid Corporation, 730 Main Street, Cambridge 39, Mass. KARL E. WENK, JR., *Assistant Secretary*, 11 Ledge Road, Old Greenwich, Conn.

• 1943 •

By now all of you have received the great news announcing the plans for the mighty 10th reunion of our Class. Many of you have already returned the enclosed post cards, indicating your intentions to attend the gala week end. If you haven't sent your card in, please do so now, for the committee must notify the hotel of the approximate attendance before the end of January. If your notice didn't reach you due to the Christmas mail deluge, then write a note to Reunion Chairman Jim Hoey, 1826 Center Street, West Roxbury 32, Mass.

The Mayflower Hotel, a magnificent resort in Plymouth, Mass., was chosen by your committee for its superb facilities and its close proximity to Boston. Our Class has exclusive use of the beautiful new terraced Shore Club, which is adjacent to the Beach Club, with its salt-water swimming pool and luncheon terrace. Both of these facilities face a wide, sandy beach on the Atlantic Ocean. The main house, on a hill overlooking this festive and restive scene, offers the finest eat, drink, and be merry accommodations on the Massachusetts South Shore. Sound inviting? Believe us, it is! So rush to your nearest mailbox with your post card or letter and indicate to your committee that you, and perhaps your best girl, expect to attend the glorious 10th reunion.

The reunion committee wishes to express its sincerest thanks to our Class Secretary, Clint Kemp, for the use of this column from now until the reunion. Clint has done a great job in keeping the Class well

informed during the past years. For the news for this issue, this reporter regrets that he must rely only on information gleaned in his travels in New England and word of mouth information from men in the Boston area. It is hoped that we will hear more from you fellows outside New England between now and June so that we may spread the word of your whereabouts and accomplishments in these columns of future issues.

I was most pleased to be visited at my new law offices in Hartford recently by Victor Darnell, I, who is with the Berlin Construction Company, Inc., of Berlin, Conn., where he has had occasion to handle some challenging and tricky problems in structural fabrication and design. Vic and his family live in a real ranch house (exposure on all sides, gentlemen) of his own design in Kensington, Conn. Also was happy to meet with Wesley Train, who is with Cooley and Company, investment brokers, of Hartford, Conn. Wes reports he is still single, and lives in New Britain.

A most recent visitor (excepting my clients, that is) was Bob Anderson, XVII, project supervisor for Ganteaume and McMullen, engineers, of Boston. Bob and his wife, Pat, have settled down for a spell in Needham Heights, Mass., with their beautiful little daughter, after a two-year hitch in Philadelphia where Bob supervised the construction of huge warehouse facilities.

Of interest to production men in our Class are the activities of Jim McDonough, VI, of the Servomechanisms Laboratory at the Institute. He has done a great deal of work on the new automatic milling machine developed there, which is operated by feed-back control devices from information supplied by punched tapes. Jim has been lecturing extensively on this new concept, and, as I learned recently from Gordon Brown '31, former Director of the Servo Lab, he can almost visualize the tape punchings when confronted with the part to be machined. We certainly look forward to further accomplishments like this for our factories of the future.

Before leaving Boston last spring, I was privileged to participate in a few very enjoyable dinner meetings at the Boston Yacht Club, organized by and for Class of 1943 members in the New England area. The average attendance at these meetings was 25, and over 50 men showed interest in the gatherings. Perhaps these meetings may inspire men of other areas to congregate from time to time for a congenial evening. Present at the Boston meetings were, among others: Fred Perry of A. D. Little, Inc., who had been commuting to Haiti; Ray Richards of the Koehler Manufacturing Company of Marlboro; Dick Zeamer of Morton C. Tuttle Company of Boston; Chris Matthew of A. D. Little, Inc.; and Jim Hoey, Jr., all of whom are class or area representatives on the Alumni Council. Also present were Gene Eisenberg, Leo Fitzpatrick, John Foley, Bill Verrochi, Cyrus Kano, T. Kemp Maples, Alvin Shairman, Morton Spears, Bill Lacy, Andrew Granese, Ken Warden, Lloyd E. Wilkie, Dick Fallows, Herbert Shivek, S. C. Kapstein, Stan Paterson, Tom Dyer, Charlie Crocker, Bob Rumsey, John Ward, T. J. Dolan,

George Freedman, Bud Greenwald, Ken Wadleigh, Rowland Hill, Jim McDonough, and Paul Travers, 2-44.

I recently visited Class Prexy Dick Childerhose in Milford, Conn., and as I approached his big, rambling house in this somewhat rustic setting I found Dick in his yard, hard at work building an enclosure for the biggest home freezer I've ever seen. It wasn't a political freezer, either, for Dick informed me he built it himself because, as he said, "I just got interested in these things one day, and it seemed pretty easy." Dick and his wife have three very charming daughters; he is with the Norden Company of Milford.

In closing, don't forget to send your class dues to Dick Childerhose, 162 High Street, Milford, Conn.; the future of our class activities depends on your support. — RICHARD M. FEINGOLD, *Acting Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 1945 •

The November issue spurred Hartmann Kircher into writing a lengthy epistle on his where- and whatabouts these past few years. It is a shame we don't affect others in a like manner! Kirch apologized for his nonattendance at Alumni Day the past couple of years and then went on to say: "I'm still working for Reaction Motors, Inc., of Rockaway, N.J. We make rocket power plants and associated equipment. I am now senior research engineer. When I left Tech, I never expected to be doing research work, but I like it very much. In my spare time I've been raising a family and remodeling a summer cottage into a year-round home. We have two girls, Kathy Ellen, four years, and Carol Ann, two years and a boy, Hartmann, born in early October." A very nice letter, Kirch, for which we are most thankful and hopeful that others will follow through in a similar manner.

Edgar Andrews is still happily employed by the Minneapolis-Honeywell Regulator Company, having been recently transferred from Jacksonville, Fla., to Philadelphia. Mr. and Mrs. John O. Atwood recently announced the birth of a six-pound daughter, Judith Thayer, born in Hollis, Long Island, on August 23. The last we knew, Jack was with General Dyestuff Corporation as a chemical engineer in New York City. However, it is understood Jack was to have moved to a more responsible position in Charlotte, N.C., early last fall. How about a report on that, Jack?

A recent news item was the marriage of Marilyn Perry to Lieutenant Charles H. Johnson, USNR, in Summit, N.J., on September 13; no word, however, on the whereabouts of the bride and groom. Another marriage is that of Carolyn Kempf Owens to Robert E. Welch in Utica, N.Y. The bride is a graduate of Masters School in Dobbs Ferry, N.Y., and Vassar College, while the groom attended Lehigh University before graduating from the Institute. Although I haven't seen them recently, it is understood that Prexy Chick and Helen-Marie Street are expecting their second sometime this month.

I don't know how carefully you read the 1952 annual report of the Alumni

Fund which came out last September, or Al Oxenham's Class Agent letter of October 15, but I do know the Class of 1945's participation was well below average. I'm only a broken down Naval Reserve Officer, not a preacher, but I do think we should all take Al Oxenham's advice and support this year's Alumni Fund drive. Let's be near the top of the participation pile instead of holding up the bottom as we have the past several years. This is the shortest bit of gossip we have had in the past couple of years, so how about news, gang!—CLINTON H. SPRINGER, *Secretary*, 44 Church Street, Bristol, R.I. *Assistant Secretaries*: WILLIAM J. MCKAY, 15 Barrett Street, Needham, Mass.; EDWARD STOLTZ, JR., Hubbard Lane, Wheeling, W.Va.

• 1948 •

Working in one state, out of an office in a second, and courting in a third—the lot of a consultant—leaves your Secretary little time to write the personal letters which appear necessary to ferret out the news for these class notes. For this, an apology.

Two letters were received, however, during the past month; one being from Maurice (alias Mo, alias Rick) Rifkin. We quote: "Back in July, 1951, I left Sperry Gyroscope to work for the Eclipse-Pioneer Division of Bendix Aviation—electronic development work on beam guidance controllers for aircraft. This last month (September) I started work for the General Precision Laboratory in Pleasantville, N.Y. The work here may be described as electronic or electromechanical system testing. G.P.L. was formed in 1945 by a group of engineers from the Radiation Laboratory at Technology. On the academic side, I have finished all my course requirements for an M.S. in industrial engineering at Columbia and am at present working on my thesis."

And Al Baum, X, writes as follows: "Since I have just switched positions, I felt it wise to get in touch with you so that you, and through you, the Alumni can be kept up to date. I have left Merck and Company in Rahway and am now with the Nestle Company in White Plains, N.Y., as a project engineer (chemical). Don't start asking me for chocolate bars just yet as White Plains has just the offices, and the plants are scattered over the country. I have started with Nestle and the job, from the description before I took it, as well as my brief try at it, seems to be an extremely interesting one, as well as rewarding in both personal satisfaction and of that 'stuff' that the government takes all too much of. So far, no news of an engagement from me (I am still single), and, honestly, who can predict when? Please don't forget to send me any and all propaganda for the proposed get-together for Alumni Day, as I have high hopes of getting back to M.I.T. to see my old friends, many of whom I hope will be there too." Thanks fellows.

From the clipping bureaus, several dissociated items came to our attention: Tom Cantwell has been appointed Industrial Liaison Officer at M.I.T. Tom, who went on to receive his master's degree in Chemical Engineering from Tech-

nology, was also graduated from Harvard Graduate School of Business Administration. He has been associated with the Procter and Gamble Company, the Buffalo Electro Chemical Company, and Ionics, Inc., of Cambridge. Charles Winnick, formerly of Hartford, Conn., recently joined the technical staff of the Du Pont Company's Organic Chemicals Department at the Jackson Laboratory of the Chamber's Works in Wilmington, Del. He received his bachelor's degree in 1948, his master's in 1949, and the doctor of philosophy in 1951. Charles joined Du Pont upon the completion of a year of research in fields related to organic chemistry at the University of Paris, where he was a Fulbright fellow. At the A.I.E.E.-I.R.E. Tenth Annual Conference on Electron Tube Research held in Ottawa, Canada, June 16, 1952, Phil Lally now a project engineer in the Electronic Tube Research and Advanced Development Engineering Department of Sperry Gyroscope, presented a paper entitled, "Preliminary Report on a Space Harmonic Amplifier."

And engagements and weddings are still in the news: Bob Fier, who is now with the Standard Oil Company of New Jersey, was engaged to Joan Kaplin; the wedding was to have taken place in November. Bill Bangser, currently a production engineer with the H. Maimin Company, is engaged to Janet Rutstein; and Eph Sparrow, an engineer with Raytheon in Waltham, to Ruth Saltman. And of weddings, there is news of two: John Hartigan, with the Security Bank Note Company of Philadelphia as an engineer, to Doris Gould; and George Biernson to Gertrude Swyers.

And you?—WILLIAM R. ZIMMERMAN, *General Secretary*, 1604 Belmar Road, East Cleveland 18, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, Lovell Road, Holden, Mass.

• 1951 •

The long lead time required for class notes preparation, and the warm weather prevailing at the time the December notes were written were jointly responsible for the failure of your Secretary to note the approaching Christmas festivities. Sooo—please accept belated Christmas greetings and best wishes for the New Year. I feel sure that this year, like the previous years, will prove to be a banner year for the '51ers. Now let's take a look at the news featuring the Class of 1951.

Starting off with engagement news, we note that George Downie and Joan Voorman announced their marital plans. George is employed by the J. L. Muscarelle, Ltd., in Hackensack, N.J. In the "I Do" area, we see that several '51ers decided that marital bliss was preferable to the independence of solitary existence. Gene Graham took Joyce Strasser as his wife in New York in October; Gene is currently on the engineering staff of the California Texas Oil Company, Ltd. Alison Newcombe walked the marital path with Virginia Archer in October at Marshfield; Al is employed by the Bethlehem Steel Company, at Quincy. In late September, George Purpur and Frances Ralph exchanged vows at Laurel,

Del. George is associated with the Du Pont nylon plant in Seaford, Del. Malcolm Ward and Eleanor Michelazzo began their dual life in October at Salem, Mass. Mal is assistant plant manager at the Wheeler Reflector Company in Hanson.

News of the fellows in the service covers both stateside and overseas duty. Two months after he left the United States for Korean duty, Lieutenant Fred McCauley was wounded while participating in front-line duty. No news is available at the present time concerning the seriousness of his wounds. Fred had entered the service in September of 1951 and had served at Fort Bragg, N.C., before leaving for overseas duty in August. In October, Paul Mort completed the 26-week Engineer Officers Candidate School at Fort Belvoir, Va., and received his commission as second lieutenant. Ensign Denny Spangler was transferred from Norfolk, Va., to the Naval Station at Trenton, N.J. Frank McKee's new duty assignment calls for work at Fort Bragg, N.C. Dan Sullivan reported that he is in the midst of the Army's intensive basic training course at Aberdeen, Md. Dan states he is scheduled to work in the research and testing section on guided missiles.

Now for news about further diverse activities. Phil Cockshutt, II, was one of the 21 recipients of the Ethyl Corporation's graduate fellowships. Bron Smulowicz is currently employed at the Digital Computer Laboratory at M.I.T. Eliahou Dabora was appointed to the faculty of Northeastern University. Dave Sparling reports that he and John Conley had a short get-together during one of John's week-end trips to Boston. John is still very happy with his work at Consolidated Trimming Company.

A further comment is in order about Ken Rathbun's book: *Working Your Way Through College*. Ken writes: "The book was published by myself while I was still a graduate student at Tech in 1951, and at that time I had not yet taken on an official publishing company name. I learned, however, that the vast majority of publishers have only one or two books to their name, so I suppose this present two-person publishing company is not too much out of the ordinary." Ken adds: "Over 2,000 copies have been sold to date, so that my original idea of a non-profit enterprise is realized. The experience has been extremely interesting and my wife and I have learned a great deal about human nature, sales and promotion, and so on, but frankly, it's a lot of work. My full-time job at Experiment, Inc., keeps me plenty busy. I am a research associate working in the fields of jet propulsion and special propellents, but the company also does general consulting and experimental research." As to some of the work details in book publishing, Ken writes: "My wife did the original manuscript on an electric typewriter which we purchased for the occasion, while Edwards Brothers did the lithoprinting. Some of the Westgaters helped us with mailing, stamping, and so on." Good Luck, Ken! Perhaps some '51ers know some worthy students who might make excellent use

of the advice Ken gives in his book, wherein he describes ways and means of working to finance college expenses.

Now before signing off, can I interest all of you to make a New Year's resolution to take a little time out from your activities and jot down a few notes about your activities so as to make the '51 class notes section full of lively news. — STANLEY J. MARCEWICZ, *Secretary*, Gallatin D-25, Harvard Business School, Boston 63, Mass.

• 1952 •

Now that Christmas and New Year's Eve have gone by, we can once more begin to think more clearly again, unfettered by hot toddies, eggnog, or Santa Claus. Just in case not all of us have completely recovered, here is a suggested hang-over remedy called Old Pepper: one jigger whiskey, one teaspoon Worcestershire, one teaspoon chili sauce (or two teaspoons tomato juice), juice of one lemon, three dashes Angostura, and one dash Tabasco. This is guaranteed to remove your headache or your head, or, if you are fortunate, both. To turn to a more serious note for a moment, I should like to wish you a very belated Merry Christmas and a very Happy New Year for both myself and Bob Briber.

Well, it looks as if some more classmates have decided to make sure their New Year is a happy one (let's hope they don't need a hang-over remedy). That's right, more engagements and marriages. Marjorie Thoner of Jamaica Plain and Chuck Beaudette (Course X) were married in Jamaica Plain back in October. They are now living in San Antonio, Texas, where Chuck is stationed with the Air Force at Lackland Air Base. Also back in October was the wedding of Jean Louise O'Connor and John Clemons in

Cambridge. John and his new wife left for Germany in November, where he is serving as a second lieutenant in the Corps of Engineers. Mary Kelley of Milton and William Dacey were married on the day before Columbus Day in Milton. The newlyweds are now living in Boston.

Emily Egan and Joe Spinelli exchanged their vows in Waterbury, Conn., back in September. Newark, N.J., is their new home, where Joe is employed as a metallurgical engineer at the American Can Company. I must not let another month go by without mentioning the marriage of Isabel Wilcox and Bill Chandler; they are now both residents of Anniston, Ala., while Bill attends a nearby educational institution, the Chemical Corps School at Fort McClellan.

Engagement pickings this month are very thin — only one to tell you about. The engagement of Camille Roberto of Medford to Carl Farrington, now a second lieutenant in the Air Force stationed in San Antonio, Texas, has been announced.

Excerpts from the mailbag: Ed Margulies writes this about Cornell Medical School: "The school here is really fabulous and I am sorry that I developed so strong a goof-off habit at Tech. Charlie Beckmann is also here. I have earned the title of second biggest goof-off in the class, with Charlie way out in front as leader. Dick Quigley and Don West are still at Tech as fifth-year aero boys. Paul Seever signed up for Radar School at Fort Monmouth. Art Turner is in Washington working on some type of project."

Word from Burge Jamieson: "We started a 48-hour rush last week (at Grumman), so about all I do now is work, eat, and sleep. Leave home at 7:30 A.M. and back at 7:30 P.M. The only sunlight I see all day long is from 7 to 8

A.M. How are things in the outside world?"

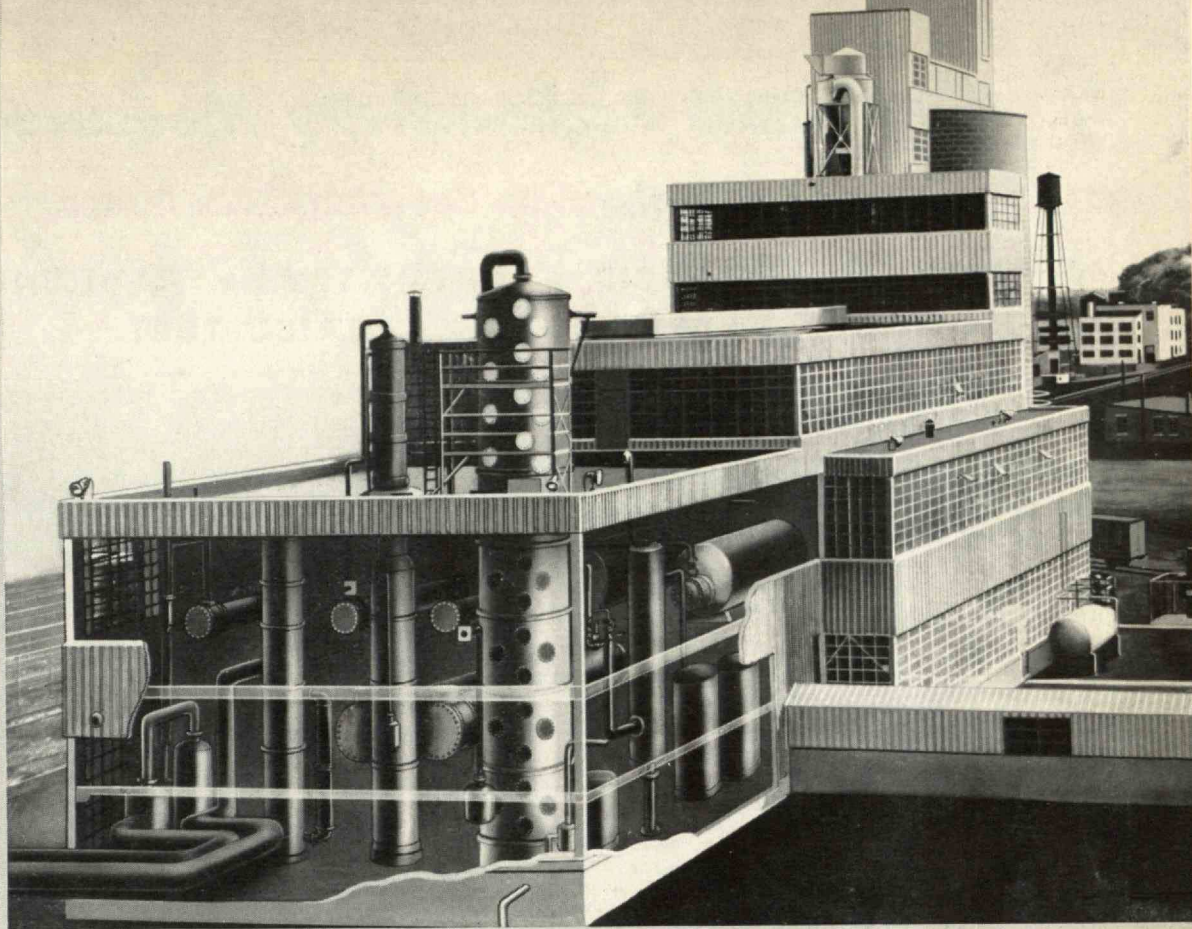
Walt Harmon had his choice words: "I'm still at International Latex Corporation. I'm administrative assistant to the vice-president of research and engineering. Thus far I've spent seven weeks in the research lab, two weeks in the Engineering Department, and four weeks on a special project. I'm very happy that I chose this company; it's wonderful to work for."

And a note from Sandy Isaacs: "I have an excellent job in the Human Resources Research Center on a project dealing with the utilization and training of low-IQ airmen, a group we previously sent to the Army. They made me liaison officer for the project to ATRC. I also got tagged as military assistant to the chief of the division, which is mainly an administrative job."

Sam Mitchell and Steve Learnard, recently of Fort McClellan, Alabama, have been given new assignments. Sam has been assigned to a Chemical Corps service company at Rocky Mountain Arsenal in Denver, Colo. Steve is now a research chemist at Dugway Proving Ground, Tooele, Utah.

I ran into Bill Conkright in Washington in November. He had just finished Engineers School at Fort Belvoir, Virginia, and was preparing to report to Camp Polk, Louisiana. He said that Dick Ayers had been sent to the office of the First Army Engineers in New York City. Both boys may be doing more traveling before long, some of it perhaps over water.

Yours truly has been most fortunate. I am now assigned to the New York Chemical Procurement Office in New York City. My address remains the same. — STANLEY I. BUCHIN, *Secretary*, 150 Tryon Avenue, Englewood, N.J.



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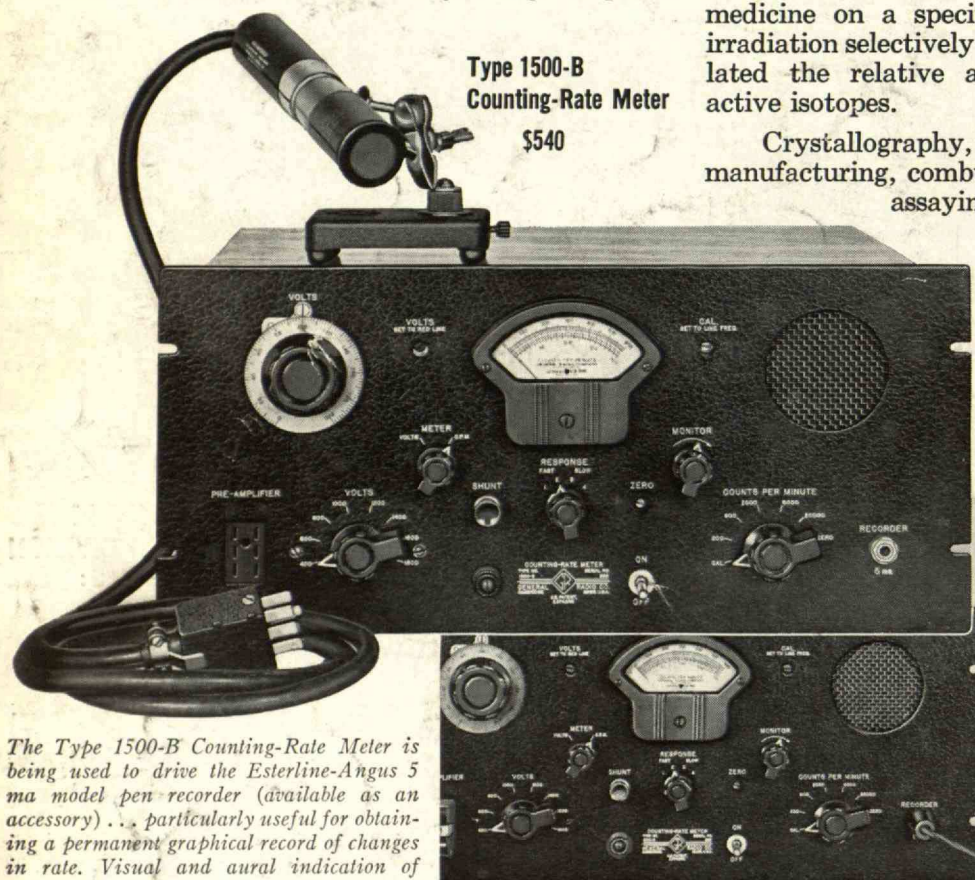
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